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THE UTILITY OF TRANSLATION AND WRITTEN SYMBOLS DURING THE FIRST 30 HOURS OF LANGUAGE STUDY.

BY- SAWYER, JESSE AND OTHERS

UNIVERSITY OF CALIFORNIA, BERKELEY CAMPUS

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AURAL-ORAL METHODS IN THE EARLY STAGES OF LEARNING A SECOND LANGUAGE WERE COMPARED AND CONTRASTED. JAPANESE LANGUAGE LESSONS WERE PRESENTED ENTIRELY BY TAPE, WITHOUT THE CORRECTION OF A MONITOR, TO TWO GROUPS OF COLLEGE STUDENTS. ONE GROUP USED A TEXT OF TRANSLATIONS THE OTHER DID NOT. EACH OF THESE GROUPS WAS FURTHER DIVIDED INTO THREE SECTIONS AND EACH SECTION RECEIVED A DIFFERENTLY ORDERED PRESENTATION OF THE SAME MATERIAL. WHEN THE RESULTS OF THE TWO GROUPS WERE COMPARED, NONE OF THE VARIATIONS APPEARED TO HAVE A DIRECT EFFECT ON LEARNING OR RECALL OF PRONUNCIATION, SYNTAX, OR COMPREHENSION. THE INVESTIGATORS SUGGESTED, HOWEVER, THAT STUDENTS MAY BENEFIT IN PRONUNCIATION, SYNTAX, AND COMPREHENSION FROM TRAINING WITH A TRANSLATION TEXT, ESPECIALLY IF THEY ARE TRAINED IN A LANGUAGE LABORATORY. THE INVESTIGATORS ALSO INDICATED THAT THE ADVANTAGE DERIVED FROM THE USE OF THE TEXT MIGHT BE LOST IF THE SYSTEM PHONEMIC OF NOTATION IS COMPLEX OR FAILS TO CONSISTENTLY DESIGNATE IMPORTANT ASPECTS OF THE PRONUNCIATION PATTERN. (PM)

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THE UTILITY OF TRANSLATION AND WRITTEN SYMBOLS
DURING THE FIRST THIRTY HOURS OF LANGUAGE STUDY

Jesse Sawyer, Susan Ervin
Shirley Silver, Joanne D'Andrea
Haruo Aoki

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FOREWORD

There are at least three important areas of experience relevant to research in language learning: language teaching, linguistics, and psychology. The investigators taking part in the project reported here have backgrounds in one or more of these areas.

Of the linguists participating, all of whom are descriptivists with a particular interest in American Indian languages, Dr. Sawyer and Mrs. Silver are teachers of English as a foreign language; Mr. Aoki, a native speaker of Japanese, is a teacher of Japanese. Dr. Sawyer, director of the University of California Language Laboratory, and Mrs. Silver have had experience with the problems involved in the preparation of teaching materials for both classroom and laboratory use. Of the psychologists participating, Dr. Ervin, a social psychologist interested in psycholinguistics and bilingualism, also teaches English as a foreign language; Miss D'Andrea has a background in verbal behavior and statistics.

Focusing the viewpoints of the teacher, the linguist, and the psychologist on the specific problems of language learning this experiment was concerned with has been fruitful. The linguists have learned something of the difficulty of measuring language skills. The psychologists have gained a practical reinforcement of their conviction of the complexity of the variables affecting verbal behavior, and the efficiency of systematic programming of structural drills.

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CHAPTER I

THE PROBLEM AND THE DESIGN

1.1. Description of the Problem. A student beginning to learn a new language usually works with four sets of data: 1) sound sequences, 2) a written symbolization of those sequences, 3) the meanings attached to the sequences, and 4) statements about the structural inter-relations of the sound sequences and meanings.

Many teachers today feel that the presentation of language material has a logical sequence: first hearing, then speaking, then reading, and finally writing. Ideally the aim of the audio-lingual method, which now has currency among language teachers, is to teach a student to pronounce and manipulate an extensive vocabulary and a variety of structures without ever seeing a written symbolization of the language he is learning. The introduction of written forms is delayed until a time neither well-defined nor universally agreed upon.

We have questioned the sequence "hearing, speaking, reading, and writing," especially if the term "reading" subsumes any sort of written form in a normalized phonemic notation, not an orthographic record. Might not a more satisfactory statement of the sequence be this: hearing and seeing, speaking, reading, and writing? The question is whether a student who already speaks and reads his own language can effectively be separated from a written representation of the new language he is learning. Is his control of the sounds and grammatical structures of that language helped or hindered by such a separation? It was one of the purposes of the experiment discussed herein to determine whether the presence or absence of text has any marked effect in the early stages of second language learning.

¹Of these four sets, the fourth, grammatical statements, is not taken here as primary because in native language learning the learner acquires the language and the ability to utilize its written symbolization first, the formal grammatical knowledge later. We are of course separating formal grammatical knowledge from the ability to comprehend and generate grammatical sequences, which is normally acquired inductively without any formal grammatical statements at all in native language learning.

The experimental language learning situation provided three dependent variables: skill in phonological discrimination and production, learning of meanings, and acquisition of grammatical patterns. We shall examine the influence of the presence of a text on each of these in turn.

It would be expected that a text would improve phonological learning for distinctions which are phonemic but acoustically difficult, since the different symbolization would provide added cues. A Japanese example (Japanese was the language used) is the difference between the phonemes we have written as /d/ and /ɖ/, the latter being the "r" of most romanizations of Japanese. This phoneme is sometimes like American English "l" or "r", more often like a British "r", or like a lenis medial "t", as in "letter," with the tongue very lightly touching the roof of the mouth. Having a text should reinforce the auditory differentiation of the two Japanese phonemes, which to an American seem very similar. A text would also help in differentiating pitch when pitch is marked. Such facilitation would be especially important when the student is entirely dependent upon taped instruction and lacks reinforcement from a teacher.

A text might impair phonological learning if sounds are different from the sounds appropriate to the text symbols for the mother tongue. In our transcription of Japanese, the difference between single and double consonants signals duration of the consonant; according to their usual reading habits, Americans would not expect any contrast between "t" and "tt" but rather a change in quality of the preceding vowel, cf. "mating" vs. "matting". Also in conflict with American reading habits, even though the segmental phonemes are all the same, is the fact that a Japanese word must be read with equal stress on all syllables. Phonological learning might again be impaired by the presence of a text if the symbol system used does not signal allophonic variations. In our transcription of Japanese, /n/, the "syllabic nasal", has nasal allophones which are homorganic with the sounds that follow, e.g. /np/, /nt/, /nk/ are phonetically [mp], [nt], [k]. This type of articulatory assimilation is also common in rapid English speech. Less familiar to an English speaker, for example, is the velarized allophone of /n/ before juncture followed by a vowel.

It would be expected that a text should facilitate paired-associate and syntactic learning, providing added cues during learning, rehearsal, and recall -- assuming the text uses familiar symbols.²

² While this experiment will not be concerned with the merits of different symbol systems, the benefits, for example, of the use of diacritics, may be different for phonological discrimination and for recall. Thus those with a text distinguishing /d/ from /ɖ/ might learn faster to hear the perceptual difference; but they might be more ready to confuse the two phonemes in recall of translations if they visualize the text, since Americans are not used to diacritics.

The second purpose of this experiment was to determine whether the presence or absence of translation has any important effect on learning during the beginning phase of language study. Again, the attitude of many language teachers is that translation, especially when the student is first becoming acquainted with a second language, is a deterrent to the development of the student's control of the new language; translation hinders the learning process in two ways: (1) the presence of the native language represents a constant interference, because it is an active reminder to the student of phonological and grammatical habit patterns he already possesses, habit patterns which may not occur in the second language; (2) translation places an emphasis on meaning which shifts the student's attention from how to say something to what to say before he has acquired a firm control of the mechanics of the second language.

What would be the effect of varying the order in which the language is practiced without translations and with translations? Practice without translations provides total attention to sound and syntax and no reinforcement except for correct pronunciation and sequencing. In the case of adults, who tend to be strongly meaning-rather than sound-oriented, such practice removes the possibility of attention to meaning. Where this practice precedes the learning of meaning through translation, both these benefits should be strong. Where such practice follows practice with translation, the facilitation may be less; then the poor pronunciation may have been practiced so long as to resist change, and attention to sounds may be distracted by rehearsal of translations. It is, in fact, a common experience in remedial second-language training that it is extremely difficult to improve the pronunciation of a fluent second-language student. Thus, from the standpoint of the sound system, later introduction of the translations should be preferable.

But what about the learning of meanings? In current experiments on paired-associate training, prior response familiarization has been found to be facilitative for more rapid training. It helps the learner identify and integrate appropriate responses in the new language, responses which he must later associate with known meanings, whether in pictures or in his native language. But familiarization training also leads to strong associations between the words in the new language and impairs performance after cessation of training.³ The new words are easily confused with each other since they are not associated with any distinctive cues, verbal or non-verbal, such as different meanings provide. What if practice without translation follows learning translations? Presumably, this procedure would provide rehearsal and be facilitative for recall.

³Current research of Dr. Leo Postman.

In sum, we would expect that a text would facilitate learning of meanings and syntax, but might impair certain aspects of phonological learning in some languages and be facilitative in others. Studying pure second-language sequences divorced from translations or any referential meanings should improve pronunciation more and acquisition of meanings less, than studying such sequences after exposure to translations.

1.2. Design of the Experiment. The presence or absence of a text and the presence or absence of translations together constitute two of the most fundamental possible variations in the language learning situation. In attempting to measure the effects of these variables, the first problem was that of designing a situation which would allow the variables to be separately measured, while holding the amount of practice constant for all the groups involved.

In the original design it was planned that the translationless groups would first study the entire set of lessons without glosses (translations) and then be given the glossed version. Even though the lesson material was to be constructed in such a way that it would be possible to anticipate forms and constructions with only the sound sequences of Japanese as stimuli, it was decided that a large block of time spent studying and memorizing without any translations given might result in serious loss of interest and an absolute inability to cope with the problems introduced in more advanced lessons. To avoid the possibility of a serious drop in motivation, the lessons in the new design were cycled in blocks in such a way that a cycle which included the translations would be completed for all groups at the tenth, twentieth, and twenty-ninth hours. This reduced the study period on the lessons without English glosses to approximately three hours in each of the three ten-hour blocks. This plan had the advantage that all groups could be tested and the scores compared after the completion of each ten-hour cycle.

It is important to remember that all groups of students were learning only to speak Japanese, and that they all had an equal amount of intensive oral practice with and without translations. The differences between the groups lie in the presence or absence of text and in the various orders in which the versions of the lesson with and without translation were presented. These served as two independent variables in a factorial design. There were three groups without text and three with text, corresponding to three levels of order: I, short cycles--translations at the end; II, long cycles--translations at the end; III, long cycles--translations at the beginning. Groups I and II both had familiarization training with Japanese sound sequences before training with English glosses. These two groups contrast in the amount of massing of practice in the sound sequences.

The detailed course plan in its revised version consisted of twenty-six lessons and three tests (the final test given twice, the second time occurring after a lapse of twelve days), making a total of thirty hours. In the diagram that follows, the light areas represent the time allotted to lessons without translation, the darkened areas to time devoted to lessons with translation. Each complete block represents ten hours. Three lessons were presented one time each hour. The entire experiment required three repetitions of each pattern.

Groups IR (Without Text) and IR (With Text)

Hours without and with glosses were alternated and followed by one repetition of the block of lessons with glosses.

Hour	1	2	3	4	5	6	7	8	9	10
										Test

Groups IIR (Without Text) and IIR (With Text)

A block of three hours without glosses was followed by two repetitions of the same block with glosses.

Hour	1	2	3	4	5	6	7	8	9	10
										Test

Groups IIIR (Without Text) and IIIR (With Text)

Two blocks of three hours with glosses was followed by one block without.

Hour	1	2	3	4	5	6	7	8	9	10
										Test

A table of this entire presentation pattern is included as Appendix B. Note that in the course of the instruction each lesson without glosses was practiced once and each lesson with the English translation was practiced twice by all students in all groups.

In a rough way groups IR and IR had the lessons ordered in somewhat the manner of a characteristic language class. The class practiced the sounds of the items to be learned, then they studied the lesson with the translation added. This pattern continued through six alternating hours and was followed by the three hours of review of the lessons with glosses.

Groups IIR and IIR̄ had a block of practice on the sounds followed by two blocks of work on the same lessons with glosses. These groups differed from IR and IR̄ in having a somewhat concentrated practice on the sounds alone before going on to the lessons with translation. In other words, before practicing new material with translations, Groups IIR and IIR̄ were exposed to a larger block of that new material without translations than were groups IR and IR̄.

Groups IIIR and IIIR̄ reversed the pattern of IIR and IIR̄ in having their concentrated practice on sounds alone last. Groups IR, IR̄, IIR, and IIR̄ were alike in having a block of three hours of practice on the lessons with translation at the end of each cycle.

The experiment consisted of a fall run and a spring run. In the spring, a change in design for groups IIIR and IIIR̄ was introduced. These two groups were not comparable to the others at the times of testing because their exposure to translation was less recent. In order to make all the experimental groups alike in the material to which they were exposed just before the tests, they were given a review cycle through all the lessons as the last cycle before each test. Thus for groups IIIR and IIIR̄ the new design became:

Hour	1	2	3	4	5	6	7	8	9	10
										Test

The complete new design which differs only for Groups IIIR and IIIR̄ appears in Appendix C. Again, note that, just as in the earlier design, each lesson without glosses is heard once and each lesson with the English translations is heard twice by all students in all groups.

It had originally been hoped that the differences uncovered among the subjects participating in the fall run would have been great enough that more variation in the design could have been used in the spring. Since no significant differences appeared in the fall, the same design was used again (with the exceptions noted for Groups IIIR and IIIR̄) in an effort to clarify trends by doubling the number of subjects.

CHAPTER II

MATERIALS AND TRAINING

2.1. The Language. In choosing the experimental materials, the first question considered was whether to use a real language or a made-up language based on nonsense syllables. To create a set of nonsense syllables and a "nonsense" grammar which would not be a redistribution of English sounds and sound clusters, but would reflect the problems of learning a foreign language would have been more work than was feasible. It also seemed likely that the experimental subjects could not sustain their interest in such a language for thirty hours.

Japanese was the language chosen because it would not be commonly known to the undergraduates who might be used as subjects; it is a major language in which considerable interest exists; it is not too radically different from the European languages most students study. Moreover, native speakers were available including Haruo Aoki, one of the project's investigators.

The writing system adopted included the following symbols.⁴

<u>Consonants</u>					<u>Vowels</u>	
p	t	č	k		i	u
b	d	j	g		e	o
f	s	š	x	h	a	
m	n	ñ	ŋ			
	đ					
<u>Semi-vowels</u>						
	w	y				

⁴No traditional system for writing Japanese was used.

Length was indicated by doubling the vowels and consonants. Voiceless vowels were indicated by a slash mark (ɸ , ɸ , ɸ).⁵ High pitch (//) was marked above the vowel and only in the pronunciation drills. Low pitch was unmarked. Proper names and the first letter in a sentence were capitalized; periods, commas, and question marks were used in the appropriate places.

We have already suggested that phonological learning might be impaired by the presence of a text if the symbol system employed does not signal allophonic variations. The fact that the writing system we adopted is not completely phonemic has an important bearing on the evaluation of the pronunciation tests of students with text. [t] and [c] (also [ts]) are allophones of the same phoneme, as are [d] and [j]; [g] and [ŋ]; [f], [x], and [h]; [s] and [ʃ]. Thus the handicap which a purely phonemic notation might have introduced in reducing, for those with text, perception of allophonic variations, is removed to some degree.

Relatively few segmental sounds are radically different from the English spoken by the experimental subjects: chiefly [x], [f], /d/, and [ts]. [x] does not occur in our subjects' speech; [f] and /d/ represent articulatory differences; [ts] has a distributional difference. The suprasegmental features of equal syllable stress and contrastive syllable pitch are quite different from the English pitch and stress patterns. Students with English reading habits might not notice the equal stress which was unmarked in our materials. Because high pitch was marked in the pronunciation drills, the students with text should have better control of the pitch contrasts than those students without text.

Since, in general, Americans learning Japanese learn a simpler phonemic system than their own and since the notation used in the text was not only phonemic but also allophonic, the group with text in this experiment might have a greater advantage than a comparable group learning a language or notation with a different relation to English phonology and orthography.⁶

2.2. The Lessons. Once the language was chosen and the writing system decided upon, the next problem was to select lesson materials. While the first thought was to adapt lessons from

⁵ A device used by Eleanor Harz Jorden in her Japanese lesson materials.

⁶ English orthography is less closely related to English phonology than is the case with most other orthographic systems. It is possible that, given a similar degree of equivalence of phonemic systems, speakers of another language might benefit more from our system of Japanese orthography, in learning Japanese, than our groups did, because of the greater consistency of their spelling and reading habits.

one or another of the available textbooks of Japanese, consideration of the necessity for controlling the material so that it would not introduce any variables other than those the experiment was concerned with led to a decision to create our own lessons. Specific aspects of Japanese phonology and grammar were presented and drilled, with and without translation, in a manner which covered the corpus to be taught as systematically and completely as possible.

The lesson materials in this experiment have some unusual properties. It must be kept in mind that all of the students' training was to take place in the language laboratory; there was to be no classroom training; the students were not to have the help of a teacher; they were never to be corrected or given a description of the phonological and grammatical systems of Japanese. These limitations meant that the materials had to encourage self-teaching and self-correction; therefore, the lessons were designed as a rather pure case of the contrastive technique. Their focus is on the structural features of sound and syntax; content, or meaning, has had relatively little role in the selection of material.

It is apparent to a student that these are unusual lessons. At the end of the experiment all of the students commented that they were aware of the structuring and patterning of the drills and they were fairly evenly divided in their reactions toward the lack of attention paid to "useful" vocabulary. Even though many felt confined by the emphasis on structure and expressed a wish to have been exposed to "natural" speech, the majority, in making unsolicited comparisons between the experiment and other second language training they had had, regretted that their previous training had not included at least some material taught in this fashion.⁷

While emphasis on structural properties is obvious in the case of drills for lessons without translations, it has an important consequence for the material with translations. Since there is little coherent focus of content in the lessons, the student's attention must be drawn to sound and structure, and possibly his interest is affected. The aids to memory for meanings provided by associations between English words from the same content domain are removed. That is, if a set of vocabulary bearing on household objects is learned together, a student may later recall the meanings by remembering the content nexus in which he first encountered the word. No such aid exists here. Because the basic principle for writing the drills

⁷Quite a few students commented that they had received a good foundation in Japanese pronunciation and expressed the intention of taking a course in Japanese so they could learn useful words and phrases.

was that of contrast, in order to adhere to this principle in creating the pronunciation drills, it was often necessary to use vocabulary items which would ordinarily never occur in an elementary language course. To provide a phonological continuity between the pronunciation drill and the grammar drill, and to minimize the size of the total vocabulary, the vocabulary of the grammar drills was based on (1) items taken from the pronunciation drills, with preference given to the more usual items whenever possible, and (2) ordinary vocabulary which either demonstrated a phonological problem emphasized in the pronunciation drills or presented no pronunciation difficulties at all. Again, in keeping with the principle of contrast, grammatical structures were not introduced or drilled until they could be contrasted with those previously learned. Therefore, the character of the vocabulary content of both words and phrases was primarily conditioned by the selection of phonological and grammatical problems to be taught. The reader should bear in mind, then, in examining the results of this research, that the lessons do not correspond to those characteristic of traditional teaching, even of the aural-oral variety.

The basic lesson plan consisted of drill on a pronunciation problem and practice on one or more grammatical problems. Of the twenty-six lessons, twenty-four followed this plan; the remaining two were based on six-line dialogues containing structures the students had already learned or were about to learn. Three of the lessons were review lessons: 5, 10, and 24, lesson 24 being a review of every structure presented. A summary of the pronunciation problems and grammatical patterns taught is presented below.

Phonology

1. Segmental
 - a. Vowels
 1. Short and long
 2. Voiced and voiceless
 3. Two-vowel clusters
 4. /y/ and /z/
 - b. Consonants
 1. Short and long
 2. Voiced and voiceless
 3. /k/, [č], [š], [x] before /i/, /z/
 4. [s] and [ts]
 5. /d/ and /d/
2. Non-segmental
 - a. Syllable pitch: high and low
 - b. Sentence intonation

Grammar

1. Sentence types

a. Request: Mite kudasai.

1. Request-answer combination:

Shiga sañ, e o mite kudasai.

Hai, mimasu.

(Mr. Shiga, please look at the picture.

All right, I'll look at it.)

b. Equational: E desu.

1. Statement:

Kode wa e desu.

(This is a picture.)

2. Question-answer combination:

a. Kode wa nañ desu ka?

E desu.

(What is this?

It's a picture.)

b. Nañ no e desu ka?

Ginkoo no e desu.

(What is it a picture of?

It's a picture of a bank.)

c. Ginkoo no e desu ka?

Hai, soo desu.

(or) Iie, soo ja adimasen.

(Is it a picture of a bank?

Yes it is.

(or) No, it isn't)

c. Non-equational:

1. Simple verb

a. Mimasu

1. Statement:

Shiga sañ wa ashta e o mimasu.

(Mr. Shiga is going to look at the picture tomorrow.)

2. Question-answer combination:

Shiga sañ wa itsu e o mimasu ka?

Ashta mimasu.

(When is Mr. Shiga going to look at the picture?

He's going to look at it tomorrow.)

b. Imasu

1. Statement:

Shiga sañ wa uchi ni imasu.

(Mr. Shiga is at home.)

2. Question-answer combination:

Shiga sañ wa uchi ni imasu ka?

Hai, imasu.

(Is Mr. Shiga at home?

Yes, he is.)

2. Gerund plus imasu: Mite imasu.

a. Statement:

Shiga san wa e o mite imasu.

(Mr. Shiga is looking at the picture.)

b. Question-answer combination:

Shiga san wa e o mite imasu ka?

Hai, mite imasu.

(or) Iie, mite imasen.

(Is Mr. Shiga looking at the picture?

Yes, he's looking at it.

(or) No, he isn't looking at it.)

2. Phrase types

a. Verb:

Mite ite kudasai.

(Please keep looking at it.)

b. Noun:

1. Endocentric

a. dai ni ka

(the second lesson)

b. kono ie

(this house)

c. ki no ie

(a house of wood)

d. taihen chisana ki no ie

(a very small house of wood)

2. Exocentric

a. Soto o mite imasu.

(He's looking outside.)

b. Soto e itte imasu.

(He's gone outside.)

c. Soto ni imasu.

(He's outside.)

d. Shiga san wa itte imasu.

(Mr. Shiga has gone.)

Although various kinds of drills were used to present the lesson material, there were two major categories: (1) drills in which the student needed only to imitate the Japanese he heard and (2) drills in which the student had to provide a response in Japanese to a Japanese or English stimulus.

The drills in a lesson were limited to the number which could be presented and practiced in ten to fifteen minutes. Because two sets of lessons were necessary, one without translations and one with, the drills had to be designed with this need in mind. All the drills for the lessons without translations were designed so that the student could give an appropriate response without knowing the meaning of the utterance. As for the lessons with

translations, while some of the drills differed from the translation-less ones only in that the English glosses were added, other drills employed English as a stimulus.

Examples of pronunciation and grammar drills for both types of lesson can be found in Appendix D.

2.3. Training. In order that all the subjects would have the same amount of contact with Japanese, the lessons and the oral test questions were taped. The lesson tapes were ten to fifteen minutes long, allowing presentation of each lesson three times in one hour. The voice of a male American native speaker of English was used for all English utterances and two male Japanese voices were used for all utterances in Japanese. The Japanese spoke varieties of the standard Tokyo dialect. Two voices were used in order to give additional cues for separating one utterance pattern from another in the lessons without translations. One voice usually began a sequence, asking questions, making statements, etc. The other voice usually came second in an exchange, answering questions, responding to a request, or, in discrimination drills, supplying the correct answer.

The lesson tapes were presented in the Language Laboratory to groups of ten students at a time. Five students of each group had a printed version of the lesson in front of them every lesson hour. All students had printed instructions for the drills. The students received no instruction other than the taped lessons; no explanations were given about the sounds or grammatical structure of Japanese; no questions the students might ask about the language or the experiment were answered; no attempts were made to correct student errors. The function of the laboratory attendant, present every hour, was to see that the lesson hour ran smoothly, to make any necessary announcements, and to keep the students' attention from lagging by cautioning them to practice. Identical announcements were made for all groups, fall and spring.

2.4.1. Design of Tests. After the completion of each cycle of lessons, a test was given, the same test to all groups. None of the tests involved use of the writing system: the students either gave oral responses or indicated answers by checking "a", "b", or "c", or "yes" or "no" on an answer sheet. Test 1 consisted of three questions; Test 2, six; Test 3, the final test, eight questions. In all the tests a certain number of the questions required no knowledge of the translation of the particular utterances being tested: all the questions in Test 1, the first three and the last in Test 2, and the first three and the last two in Test 3. Test 2 had two questions, and Test 3 had three questions involving translation.

The questions, which dealt with pronunciation, grammar, and translation, can be classified as production or recognition items, depending on whether the student was required to give an oral response or was to check the answer sheet. A distribution of the

question types is presented in the following table.

TABLE 1
TEST QUESTION TYPES

	Production			Recognition		
	Test 1	Test 2	Test 3	Test 1	Test 2	Test 3
Pronunciation	Q3	Q6	Q7 Q8	Q1 Q2 (Items 17-20)	Q1 Q2 (Items 17-26)	Q1 Q2 (Items 17-26)
Grammar				Q2	Q2 Q3	Q2 Q3
Translation			Q6		Q4 Q5	Q4 Q5

The questions concerned with testing phonological discrimination and pronunciation were of the following kind:

1. The student heard one Japanese word. It was followed by two other words. He was to decide which of the two words was the same as the first. (Q1)

2. The student heard a request or a question. He then heard two replies. He was to decide which reply was appropriate. The correct answer depended upon the student's ability to make a proper phonological discrimination (Q2, Items 17-26); for example:

Šŷtte imasyŷ ka?

- a) Hai, šŷtte imasyŷ.
- b) Hai, šŷtte imasyŷ.

In the above two question types, the contrasts which the students had to discriminate were presented twice and the correct choice was required in both cases in order for credit to be given.

3. The student heard a sentence and was to say it twice. The question was scored according to the number of sentences right. Errors were defined as garbles, losses, transpositions, or substitutions of words or larger stretches of speech. (Although this question has three different numbers, Q3 in Test 1, Q6 in Test 2, and Q7 in Test 3, the content was the same for all tests.)

4. The student heard short Japanese sentences which he was to say twice. Seventeen of these sentences were minimally different and both contrasting features had to be pronounced correctly in order for credit to be given. Single selected phonologically difficult features in eleven utterances were scored for phonetic accuracy. (Q8)

The questions described below dealt specifically with grammatical problems.

1. The student heard a request or question. He then heard two replies. He was to decide which reply was appropriate. The correct choice depended upon his control of grammatical patterns. (Q2)

2. The student was asked to observe the use of a word in a sentence. He then heard a series of words and phrases and was asked to indicate by checking "yes" or "no" whether these could fill the same slot in the sentence as the given word did. (Q3)

The translation questions had the following design.

1. The student heard an English utterance. He then heard three Japanese utterances. He was to check "a", "b", or "c" to indicate which Japanese utterance was equivalent to the English. (Q4)

2. The student heard a Japanese utterance. He then heard three English utterances. He was to check "a", "b", or "c" to indicate which English utterance matched the Japanese. (Q5)

3. Having heard an English word, phrase, or sentence, the student was asked to give the corresponding Japanese form twice. (Q6)

Test 3 contains examples of all the test questions used in the course of the experiment; see Appendix E.

2.4.2. Scoring test responses. The majority of questions were designed as recognition items, with multiple choice responses which could be checked on response sheets. The stimuli were always presented on tape. There were, however, two questions in the fall and three in the spring which required oral, tape-recorded responses. One of these was Q6, a translation from English to Japanese. These responses were scored right or wrong, without attention to high standards of phonetic accuracy in the student's response. Essentially the judgment was on grammatical and lexical grounds.

For two of the production questions more difficult judgments were required. One we have called a test of articulatory fluency. In this item, given in both the fall and the spring (Test 3, Q7), a student was asked to repeat sentences presented on tape. These

were successively expanded or shortened, and they also included unrelated sentences of increasing length. The imitations were judged in terms of transpositions, omissions, insertions, garblings, and substitutions of words and phrases. Both a Japanese and an American linguist scored errors for this test, with scores correlated .81. Most of the disagreement occurred in evaluation of one subject's repetition of one type of error.

In the spring a test was designed purely as a test of accuracy of pronunciation. It was given at the final session, at the time of the repetition of Test 3, (Test 3, Q8). Short sentences were presented, to be imitated twice. The test (see Appendix E) included three types of items. Some were merely buffer items, which were not judged. A second type was designed for phonetic evaluation. For these, the Japanese linguist transcribed the sound phonetically and marked them right or wrong. On a third type of item, minimal pairs were presented. Both members of the pair were in the test, but not in adjacent position. Students were given differing stimulus tapes so that the judge did not know which of the pair the student was imitating. He checked which of the two he heard, after listening once. It should be noted that the conditions of judgment were carefully controlled, since the judgement in this case constituted a sensitive perceptual test for the judge.

CHAPTER 3

SUBJECTS AND PROCEDURE

3.1. Preliminary Selection. The subjects were undergraduate students at the University of California at Berkeley. They were contacted through the University Placement Office and were given a questionnaire to fill out. Students were excluded if they had a marked accent (Southern, New England, etc.), determined through a short interview; if English was not their native language; if they had any previous knowledge of Japanese; if they had or were taking a formal course in phonetics; and if they had any major speech or hearing difficulties. One final criterion, not rigidly observed, was the age of the student. Most of the students selected were between the ages of 18 and 23, although a few were older.

3.2. Pretesting. Students not excluded on the basis of the above criteria were given the Carroll and Sapon Modern Language Aptitude Test (MLAT) (Appendix A, I). Since there were very few students at the lower end of the distribution, and in order to match the groups as closely as possible, students with percentile scores on the MLAT of less than 45 were excluded. The remaining students were then divided into groups of five each according to their scores on the MLAT. The selection of students was the same in the spring as in the fall. The sex of the groups was controlled so that there would finally be five male and five female students in each group. The subjects were to be paid for their hourly attendance on completion of the full set of hours.

3.3. Final Selection. The final composition of the groups is given in the following table.

TABLE 2
SCORES ON MODERN LANGUAGE APTITUDE TEST

<u>Fall Groups</u>				<u>Spring Groups</u>			
<u>Group</u>	<u>Sex</u>	<u>Mean Age</u>	<u>Mean MLAT Percentile</u>	<u>Group</u>	<u>Sex</u>	<u>Mean Age</u>	<u>Mean MLAT Percentile</u>
IR	2F, 3M	18.6	75.8	IR	3F, 2M	18.4	81.6
IR	2F, 3M	20.0	80.8	IR	3F, 2M	18.2	73.4
IIR	3F, 2M	18.4	76.4	IIR	2F, 3M	20.6	78.2
IIR	3F, 2M	19.6	79.8	IIR	2F, 3M	18.4	75.8
IIIR	2F, 3M	19.8	78.4	IIIR	3F, 2M	20.8	76.8
IIIR	3F, 2M	19.4	75.8	IIIR	2F, 3M	18.6	81.2

It was originally thought that it would be possible to combine the fall and spring groups in the final analysis of the results. In order that the combined groups would be matched as closely as possible on the MLAT, groups which had a high mean MLAT in the fall had a low mean MLAT in the spring and vice versa.

3.4. Trial Groups. In preparation for the final experimental groups four trial groups were presented the first fifteen lessons and three tests in May and July, 1961. In May two groups of five students each worked through the lessons and were tested at the end of the fifth, tenth, and fifteenth lessons. One group had no printed version of the material being studied, the other did. In both cases the students listened to each lesson three times in an hour, hearing the version without the English glosses once and that with twice.

In July two additional groups of 5 students each were trained with 15 lessons and 3 tests. They were contrasted in that one group heard all 15 lessons without translations before starting over with the translations; the other heard the lessons without translations grouped at the end of training. For both groups, the lessons with translations were heard twice in a row before proceeding. Thus each student, at the end of training, had heard each lesson once without glosses, and twice, together, with glosses. Three tests were given, after lesson 5, in the first block of the experiment, and after lessons 10 and 15 in the second block, when glosses had been introduced for the first group and terminated for the second group. No printed text was used for either group.

The trial groups were used to check the printed lessons and tape recordings of the lessons for errors. They served as a proving ground for the various test questions and also allowed some consideration of the feasibility of the general design.

As a result of the experience gained with the trial groups many typographical and recording errors were uncovered and corrected, the tests were almost completely revised, and the general plan of instruction for the groups was entirely reworked.

3.5. Final Groups. In the fall of 1961 the first of the subject groups began the thirty hours of study and testing which constituted the main body of the experiment. Ten students each hour for three hours each evening worked through the cycle of twenty-six lessons (numbered 1 through 24, including the split lessons 2, 2A and 3, 3A). In each group five students were given the printed text of the lesson they were working on during each appropriate fraction of the hour. The other five students each hour had no printed text. The texts of the lesson remained face down until the lesson began and were collected whenever work with that particular lesson was completed. The hours used were 6:00, 7:00, and 8:00 P.M. It was necessary to use these hours because the subjects did not have sufficiently flexible daytime schedules.

Training occurred five days a week in the fall, and six days a week in the spring. Absences had to be made up before the next meeting of the group.

Comment sheets were collected from the subjects at the end of the third, ninth, nineteenth, and twenty-fourth hours as well as after the first, second, and final tests in the tenth, twentieth, and twenty-ninth hours.

During the course of the lessons various drill performances were recorded and one question involving repeating a series of utterances was recorded by each student individually during each of the four test days of the three tests. Test 3, the final test, included the individually recorded vocabulary question, number 6. Question 8 covering pronunciation was recorded by the groups taking the lessons in the spring, at the Test 3 retest.

An attendant, the same person for all groups, fall and spring, was present during all of every hour for every group. For the duration of each hour he monitored individual performances in rotation. Other monitors from the personnel planning and conducting the experiment were present on a random basis. A series of brief announcements, identical for all groups, gave special directions designed largely to urge the student to concentrate. In addition to the necessary directions for tests, these announcements included warning of test dates, encouragements to pay careful attention to pronunciation, and requests that everyone work as hard as possible and concentrate as intensely as possible.

CHAPTER 4

RESULTS AND CONCLUSIONS

4.1. Plan for analysis of results. The subjects were given two tests during the course of the experiment and a final test (Tests 1, 2, and 3). As a measure of retention, the final test was repeated twelve days after the conclusion of the experiment (Test 3, Re-test).

Although the groups had initially been matched as closely as possible on the basis of the MLAT, a preliminary analysis of the test scores gave some indication that there was a correlation between the test means and the MLAT means. For this reason it was decided to do an analysis of covariance on the data. For tests 1, 2, 3 and the re-test, the MLAT was used as the covariance variable. For the re-test, test 3 was also used as the covariance variable.

Since the conditions of the experiment were not the same in the spring as in the fall, a three-way analysis was done, using season (fall and spring) as a block variable (S) with two levels of reading (R) and three levels of order (O). The two levels of reading (R) designate the groups with text as opposed to the groups without text.

4.2. Statement of results. Before discussing the significance of the results, we shall look at them first in terms of the tests as a whole and then in terms of specific test questions.

4.2.1. Results of over-all tests. Tests 1, 2, and 3 differed to some degree in composition. Test 1 included no translation questions; all of the tests contained phonological discrimination and pronunciation items, and grammatical recognition questions. (See pages 14-15 for a breakdown and discussion of the test questions.) For simplicity we have presented a pooling into a total score. Correlations between the total for each test and the MLAT are given in Table 3, the lower correlation for Test 1 presumably reflecting Test 1's different composition.

TABLE 3
CORRELATIONS BETWEEN TESTS AND THE MLAT

	Intra-class r
Test 1 x MLAT	.28
Test 2 x MLAT	.47
Test 3 x MLAT	.45

There was no significant difference between the groups at the time of the first testing. It can be seen from Table 5 that there was little variation between the group means for Test 1.

On Test 2 (Tables 6-7) significant differences appeared, both involving an interaction with season. In the spring, but not in the fall, the reading groups had consistently higher scores than the non-reading groups. In the spring, also, a change in the relation between performance and order of presentation took place: in the fall, order II (long cycle, translation delayed) had been superior; in the spring, this condition produced the worst test results.

On Test 3 (Tables 8-9) it can again be seen that the reading groups performed consistently better than the non-reading groups in the spring, but not in the fall. Thus the trend in Test 2 is continued. In Table 10, the improvement from Tests 1 to 3 shows the same pattern. In none of these tests was there a significant sex difference; for this reason the sexes were pooled.

At the conclusion of training, after Test 3, there was a delay of twelve days and then a re-test, a repeat of Test 3. It is usual in retests for the most difficult items, learned by the best students, to be forgotten, so that some levelling of difference occurs. Inspection of Tables 11 and 12 shows, however, that in the spring the reading groups remained superior to non-reading groups, even though some decline occurred.

The analysis of the change between Test 3 and the re-test is shown in Tables 13 and 14. Here it can be seen that the decline is significantly greater for the groups with text. This was true in both the fall and spring groups.

4.2.2. Results of production tests for pronunciation. Separate evaluation of the tests for pronunciation was undertaken. The two production questions involved were the articulatory fluency question (Test 1, Q3 and Test 3, Q7) and the phonological accuracy question (Test 3, Q8).

Because of some mechanical failures, not all the items on Test 1, Q3 and Test 3, Q7 were available for all the students; therefore, the scores were converted to percentage correct, and the improvement from Test 1 to Test 3 was measured for students tested at both times (Table 15). On Test 1, in both the fall and spring, the groups with no text were consistently superior. Yet, by Test 3, except for fall group I, the groups with text were superior. These differences were not, in themselves, significant, but their combined effect was to produce significantly greater improvement ($p < .05$) for the reading group in both seasons, on the test for articulatory fluency.

It should be recalled that the articulatory fluency question

TABLE 4

TEST 1 ANALYSIS OF COVARIANCE

Source	y^2 S.S.	xy S.P.	x^2 S.S.	$(y-bx)^2$ S.S.	df	MS	F
S	10.42	-17.50	29.40	12.40	1	12.40	
O	1.43	-.68	32.43	1.60	2	.80	
R	1.35	6.30	29.40	.75	1	.75	
SxO	68.03	39.95	61.30	64.54	2	32.27	2.66
RxS	8.81	25.30	72.60	6.29	1	6.29	
RxO	2.10	17.85	151.90	.61	2	.30	
RxOxS	27.64	85.15	265.30	19.21	2	9.61	
Within	<u>620.40</u>	<u>921.40</u>	<u>17071.60</u>	570.40	47	12.14	
TOTAL	740.18	1071.77	17713.93				

$$b = .054$$

$$y = \text{Test 1}$$

$$x = \text{MLAT}$$

TABLE 5

TEST 1 MEANS ADJUSTED FOR REGRESSION ON MLAT

	Fall			Spring		
	Reading	Non- Reading	Total	Reading	Non- Reading	Total
I	30.1	32.0	31.1	33.1	31.2	32.1
II	33.1	34.2	33.6	30.2	29.5	29.9
III	32.2	31.8	32.0	31.3	32.7	32.0
Total	31.8	32.7	32.2	31.5	31.1	31.3

TABLE 6

TEST 2 ANALYSIS OF COVARIANCE

Source	y^2 S.S.	xy S.P.	x^2 S.S.	$(y-bx)^2$ S.S.	df	MS	F
S	91.27	-51.80	29.40	116.32	1	116.32	1.81
O	24.03	-12.72	32.43	31.49	2	15.74	
R	153.60	-67.20	29.40	185.64	1	185.64	2.89
SxO	617.63	114.85	61.30	568.68	2	284.34	4.42*
RxS	576.60	204.60	72.60	487.49	1	487.49	7.58**
RxO	60.10	-31.15	151.90	82.14	2	41.07	
RxOxS	246.90	254.55	265.30	145.13	2	72.56	1.13
Within	<u>3889.60</u>	<u>3868.00</u>	<u>17071.60</u>	3021.25	47	64.28	
TOTAL	5659.73	4279.13	17713.93				

*Significant at the .05 level

**Significant at the .01 level

$$b = .227$$

$$y = \text{Test 2}$$

$$x = \text{MLAT}$$

TABLE 7

TEST 2 MEANS ADJUSTED FOR REGRESSION ON MLAT

	Fall			Spring		
	Reading	Non- Reading	Total	Reading	Non- Reading	Total
I	73.2	82.7	78.0	85.7	75.6	80.6
II	86.5	85.8	86.1	80.3	69.2	74.8
III	82.0	79.8	80.9	84.5	77.9	81.2
Total	80.6	82.8	81.6	83.5	74.3	78.9

TABLE 8
TEST 3 ANALYSIS OF COVARIANCE

Source	y^2 S.S.	xy S.P.	x^2 S.S.	$(y-bx)^2$ S.S.	df	MS	F
S	5.40	-12.60	29.40	20.67	1	20.67	
O	156.90	70.60	32.43	104.46	2	52.23	
R	680.07	-141.40	29.40	800.96	1	800.96	3.37
SxO	1542.70	186.20	61.30	1400.32	2	700.16	2.95
RxS	1251.26	301.40	72.60	1016.32	1	1016.32	4.28*
RxO	96.03	9.10	151.90	114.10	2	57.05	
RxOxS	558.64	379.70	265.30	291.88	2	145.94	
Within	<u>14030.00</u>	<u>7004.00</u>	<u>17071.60</u>	1156.46	47	237.37	
TOTAL	18321.00	7797.00	17713.93				

*Significant at the .05 level

b = .410

y = Test 3

x = MLAT

TABLE 9

TEST 3 MEANS ADJUSTED FOR REGRESSION ON MLAT

	Fall			Spring		
	<u>Reading</u>	<u>Non- Reading</u>	<u>Total</u>	<u>Reading</u>	<u>Non- Reading</u>	<u>Total</u>
I	101.8	110.7	106.2	121.8	105.3	113.5
II	114.5	113.7	114.1	109.5	89.2	99.4
III	109.6	104.3	106.9	115.7	106.0	110.8
Total	108.6	109.5	109.1	115.9	100.1	108.2

TABLE 10

IMPROVEMENT FROM TEST 1 TO TEST 3

	Fall			Spring		
	Reading	Non-Reading	Total	Reading	Non-Reading	Total
I	71.0	79.8	75.4	90.8	72.8	81.8
II	80.6	79.8	80.2	79.2	59.0	69.1
III	76.2	72.2	74.2	83.6	75.6	79.6
Total	75.9	77.3	76.6	84.5	69.1	76.8

TABLE 11

RE-TEST ANALYSIS OF COVARIANCE

Source	SS y	SP xy	SS x	SS y-bx	df	MS	F
S	18.15	-23.10	29.40	44.17	1	44.17	
O	83.43	46.68	32.43	48.63	2	24.32	
R	260.42	-87.50	29.40	343.11	1	343.11	1.21
SxO	1372.30	161.35	61.30	1242.18	2	621.09	2.20
RxS	1848.15	366.30	72.60	1539.87	1	1539.87	5.45*
RxO	132.23	-98.55	151.90	248.36	2	124.18	
RxOxS	739.90	420.05	265.30	421.62	2	210.81	
Within	16600.40	7519.60	17071.60	13288.21	47	282.73	
TOTAL	21054.98	8305.03	17713.93				

*Significant at .05 level

$$b = .440$$

$$y = \text{Re-Test}$$

$$x = \text{MLAT}$$

TABLE 12

RE-TEST MEANS ADJUSTED FOR REGRESSION ON MLAT

	Fall			Spring		
	<u>Reading</u>	<u>Non- Reading</u>	<u>Total</u>	<u>Reading</u>	<u>Non- Reading</u>	<u>Total</u>
I	95.1	113.6	104.4	119.6	103.0	111.0
II	113.2	113.2	113.2	106.0	91.9	99.0
III	108.3	105.7	107.0	116.2	102.2	109.2
Total	105.5	110.8	108.2	113.9	99.0	106.4

TABLE 13

ANALYSIS OF COVARIANCE OF CHANGE FROM TEST 3 TO RE-TEST

<u>Source</u>	<u>y² S.S.</u>	<u>xy S.P.</u>	<u>x² S.S.</u>	<u>(y-bx)² S.S.</u>	<u>df</u>	<u>MS</u>	<u>F</u>
S	18.15	9.90	5.40	3.36	1	3.36	
O	83.43	108.85	156.90	27.27	2	13.64	
R	260.42	420.83	680.07	123.52	1	123.52	4.51*
SxO	1372.30	1452.36	1542.70	21.50	2	10.75	
RxS	1848.15	1520.70	1251.26	36.26	1	36.26	1.32
RxO	132.23	75.02	96.03	80.30	2	40.15	1.47
RxOxS	739.90	567.44	558.64	163.98	2	81.99	2.99
Within	<u>16600.40</u>	<u>14657.40</u>	<u>14030.00</u>	1287.19	47	27.39	
TOTAL	21054.98	18812.50	18321.00				

*Significant at the .05 level

$$b = 1.045$$

$$x = \text{Test 3}$$

$$y = \text{Test 3, Re-Test}$$

TABLE 14

MEAN CHANGE FROM TEST 3 TO RE-TEST

	Fall			Spring		
	<u>Reading</u>	<u>Non- Reading</u>	<u>Total</u>	<u>Reading</u>	<u>Non- Reading</u>	<u>Total</u>
I	-6.8	3.0	-1.9	-2.0	-2.4	-2.2
II	-1.4	-0.4	-0.9	-3.6	2.6	-0.5
III	-1.4	1.4	-0.0	0.4	-3.6	-1.6
Total	-3.2	1.3	-0.9	-1.7	-1.1	-1.4

TABLE 15

ARTICULATORY FLUENCY TEST (TEST 1, Q3, TEST 3, Q7)

Mean Percent Correct

	<u>Fall</u>					
	<u>Test 1</u>	<u>Reading Test 3</u>	<u>Difference</u>	<u>Test 1</u>	<u>Non-reading Test 3</u>	<u>Difference</u>
I	61	84	23	74	88	14
II	65	86	21	73	80	7
III	55	78	23	59	72	13
Total	60.3	82.7	22.4	68.7	80.0	11.3

	<u>Spring</u>					
	<u>Test 1</u>	<u>Reading Test 3</u>	<u>Difference</u>	<u>Test 1</u>	<u>Non-reading Test 3</u>	<u>Difference</u>
I	58	74	16	62	72	10
II	54	77	23	60	76	16
III	58	84	26	71	79	8
Total	56.7	78.3	21.6	64.3	75.7	11.4

TABLE 16
PRONUNCIATION. (Test 3, Q8) ANALYSIS OF COVARIANCE

Source	y S.S.	xy S.P.	x S.S.	y-bx S.S.	df	MS	F
R	13.33	8.00	4.80	13.49	1	13.49	1.57
O	7.20	-13.80	57.27	6.93	2	3.46	
RxO	1.87	11.00	407.40	2.13	2	1.06	
Within	<u>198.80</u>	<u>-104.00</u>	<u>9992.40</u>	197.72	23	8.60	
TOTAL	10461.87	-98.80	221.20				

$$b = -.01$$

$$x = \text{MLAT}$$

$$y = \text{Question 8}$$

TABLE 17
PRONUNCIATION (Test 3, Q8)
MEANS ADJUSTED FOR REGRESSION ON MLAT

	<u>Reading</u>	<u>Non-Reading</u>	<u>Total</u>
I	18.5	17.2	17.8
II	20.0	18.0	19.0
III	18.8	18.1	18.5
Total	19.1	17.8	18.4

was judged for errors in transpositions, omissions, insertions, garblings, and substitutions of words and phrases.

The phonological accuracy question (Test 3, Q8) was given only to the spring group and only occurred on the re-test. In over-all performance there were no significant differences. (Tables 16-17).

The reader is reminded that question 8 (Test 3, Re-test) contained two types of items: those which could be judged for the student's ability to produce adequate phonemic distinctions and those items which could be judged for satisfactory production of allophonic variations.

4.3. Discussion of the results. On examining the results of the tests, we see that the most puzzling are those showing a consistent benefit from a text in the spring run but not in the fall run. In the spring the reading procedure produced superior results on Test 2 and the superiority remained on Test 3 and the recall test, with a significant decline between Test 3 and the re-test.

Three basic differences between the fall and spring groups may be the reasons for the puzzling nature of the results: a change in order of material presentation for groups IIIR and IIIR⁸ (see page 6) slightly more massed training in the spring, with a total of 5 rather than 6 weeks for the total training, and a change in the amount of outside attention given during the fall and spring training periods.⁸

It is not likely that the change in presentation of material for groups IIIR and IIIR⁸ is the explanation of the puzzle as these groups were not contributing to the interactions. While the two groups did show slight improvement in the spring, as would be expected in the new procedure, this change was not involved in the contrast which appeared statistically.

While the change in massing of training might have a slight impact on the over-all performance of all the groups, it is not clear why the presence or absence of a text would have been affected by this change.

⁸The training in the spring semester ceased before spring vacation and the recall test occurred at the conclusion of spring vacation; in the fall no vacation occurred during the delay between training and the recall test.

The third difference, the amount of outside attention given during the training period, may be a more likely reason. While formal monitoring was the same for both fall and spring groups, in the fall there was present at many of the training sessions, in addition to the laboratory assistant, at least one senior project member who listened for and made notes of phonological mistakes the students were making and also watched for and made notes of student reactions to the experimental situation and the lesson materials. Although these investigators never said anything, the laboratory equipment is such that a student was aware of being monitored and it was also possible, at times, for the students to see the investigator making notes. In the spring, a project member was present much less frequently.

In addition to the reduction in the spring in monitoring time for the project members, was the reduction in the number of recordings, during the training hours, of student performance. The students knew when they were being recorded because their microphones would be turned on manually and they themselves operated the control buttons for the recordings.

If we ask why reading was more facilitative in the spring, one explanation, then, may lie in the monitoring and recording differences. Not only does a text permit rehearsal and review, it also provides a visual focus for attention, thus possibly reducing boredom and distractability. A number of students, on the comment sheets filled out at the end of the experiment, complained of difficulty in concentrating, of being distracted by the surroundings (the most common distraction being the perforations in the material the laboratory booths were constructed of), and of physical discomfort including having headaches and being excessively warm. The spring non-reading groups then, not only had no reinforcement from a text, but also lacked possible reinforcement from monitoring and recording. The spring and fall groups without text differed somewhat more for groups I and II than for group III. This last group, having learned translations before exposure to sound sequence practice, could at least rehearse the translations.

For Test 2, but not for Test 3, there was a difference in the relative success of the groups differing in order of presentation, in the two seasons. Group I with text was very low in the fall; Group II without text was lowest in the spring. The shift in position of these groups seems to account for the interaction of season with order of presentation. If the explanation in terms of boredom and distractability is correct, we would expect the change in monitoring to affect Group II the most since it had the longest practice before exposure to meanings. The training procedure Group II underwent might be the most sensitive to social reinforcement.

If we examine the profiles for the different test sections for groups I with text and II without text, it appears that the change in the spring was general. The profiles are shown on Figures 1-4.

The questions under study in this experiment were (1) what effect does the presence or absence of text have in the early phase of language study and (2) what is the effect of the order of presentation of translation? On the basis of the examination, here presented, of the test results, we can say that there is a slight benefit to pronunciation in a student's having a text, but no discernible impact on any skills in variations in order of presentation of translation.

We predicted that, for the most part, the notation employed in this experiment would result in facilitation in learning phonology for students with a text, as well as facilitation in learning of syntax and meanings. There was no reliable test for any of the particular phonological skills, however, so the following examples are merely illustrative. A longer test would be necessary for adequate exploration of the issue.

At the end of the training periods, of the three questions concerned with phonological learning, the text had no discernible effect on the students' ability to recognize phonemic distinctions (phonological discrimination: Q1, Q2-items 17-26); there was no over-all significant difference in the students' ability to produce phonemic distinctions and allophonic variations (phonological accuracy: Q8-spring only); and the results of the articulatory fluency question (Test 3, Q7) showed some evidence that the text did help the students in the production of sentences of increasing length.

Although in over-all performance on question 8 there were no significant differences, some of the items did produce interesting developments for which it would be worthwhile to gather more data. We predicted that a text should improve phonological learning for distinctions which are phonemic, but acoustically difficult. Taking the contrast /d/ vrs. /ɖ/ as a case in point, in an item involving /hoteɖu/, "hotel", the reading and non-reading groups produced approximately the same number of errors. However of the nine errors the group with text made, six errors involved the substitution of /d/ for /ɖ/ whereas /d/ did not appear in any of the eight errors made by the group without text, the substitutions in this case being English /l/ or /r/. This finding raises some questions about the use of diacritics.

Because of the distributional differences between Japanese and English of pitch and stress, we suggested that the marking of high pitch in the pronunciation drills should act as a reinforcement for the students with text, and, indeed, the reading group had the highest scores on the pitch contrast in question 8.

We also thought that, because our transcription did not indicate that every syllable in Japanese has equal stress, there might be more of a tendency for the group with text, because of American reading habits, to superimpose English stress patterns onto the Japanese they learned. The item in Question 8 which tested for stress did not support this supposition. It was a weak test, concerning changes in the vowel qualities of a four-syllable sequence on one test item.

We suggested that phonological learning might be impaired by the presence of a text if the symbol system employed does not signal segmental allophonic variations. Although we included symbols which represented allophones, we did not attempt to represent the allophones of /n̄/, the "syllabic" nasal phoneme. The items on question 8 which forced the production of this phoneme did not develop any differentiation between the group with text and the group without text, but these differences are hard to hear on tape.

Again, we predicted that, because of the conflict with American reading habits, our text might impair phonological learning where the transcription represented sounds different from those appropriate to the same English text symbols. We took as an example the writing of Japanese long consonants as double consonants. On question 8 the reading groups had better scores than the non-reading groups on the items involving consonant length.⁹

The reader should bear in mind that the observations just made on phonological learning can only be considered anecdotal since the data on which these observations were made is insufficient, involving in some cases only one item.

The prediction that a text would facilitate the learning of meanings and syntax, but might impair certain aspects of phonological learning, was confirmed in the spring, but the lack of difference in the fall suggests that the effects of a text may be important only under special circumstances.

As far as the effect of the order of presentation of translations is concerned, we predicted that the alteration in order of presentation would have different effects on phonological learning and other skills: delayed introduction of translations would facilitate learning of phonological discriminations and pronunciation, whereas introduction of translation from the beginning should facilitate the learning of meanings.

⁹The groups with text also had better scores on items involving vowel length, a feature which is allophonic, not phonemic, for general American.

There was no indication in the final results that variations in order of introduction of translations had an impact.

During the course of the training periods monitors noted that a student who could produce a good Japanese intonation pattern when the translation was absent adopted the intonation pattern of the English translation when it was present. They also noted that once a student became aware, through the translation, that some of the sound sequences were English loan words (e.g. peeji, "page"; hotedu, "hotel") his pronunciation of some of these words got worse. However, the order of introduction of the translations had no effect on these phonological problems, or any others. The magnitudes of delay were, of course, small. It is possible that delay of greater magnitudes might have an impact.

It is a possibility that, in conjunction with lack of a text and reduced social reinforcement, delayed training in meanings, when translation is the vehicle for teaching meanings, may impair all types of learning tested. This was the situation of group IIR in the spring. This condition seems to be the most responsive to monitoring since our results show very high performance of group IIR in the fall and the lowest performance in the spring.

4.4. Suggestions for further research. Our experience with this language learning experiment has pointed up the following areas in which further investigation might be fruitful.

4.4.1. The effect of text. Since a trend in the results of the present experiment suggests that the effects of a text as an aid to language learning may be important only under special circumstances, it would be useful to determine what those effects are on various skills under other conditions and for other languages and writing systems.

It would also be interesting to determine whether the trend we found exists not only in the age group our students represented but also among child and adult age groups. The college students participating in our experiment were between 18 and 23 years of age. It might be expected that the effects of a text, given other special conditions, would vary according to the age of the subjects examined. It would also be of value to examine the merits of different types of symbol systems for reducing errors in pronunciation. Such issues as the use of different symbols for allophones, rather than a phonemic system, and the effects of the use of diacritics need empirical testing.

4.4.2. Retention of material learned. In the present investigation after cessation of training there was significantly less retention of material learned with text. If retention of material learned with and without text could be measured at regular intervals over a long period of time, it might be possible that the rate of loss of learned material would indicate that training which appeared superior on the basis of tests administered during the

actual learning period should be abandoned.

It would be especially interesting to know the nature of the material which is forgotten, as well as the pattern in which the loss occurs. The specific items for which retention proved low might give valuable suggestions for the creation of teaching materials.

4.4.3. The analysis of error trends. One of the test questions used in this study, the question concerned with articulatory fluency, required that the subjects, after hearing a sentence once, pronounce it twice. There was a total of twenty sentences of increasing length. The students' imitations were scored for a variety of types of errors: transposition, insertions, omissions, garbles, and substitutions of words or phrases. As would be expected, there was an obvious improvement between the performance at the tenth hour and that at the twenty-ninth hour. However, there was one exception: in all cases except that of group IIIR the number of substitutions had increased by the time Test 3 was given.

The obvious comment is that the student, as he acquires more grammatical knowledge and a larger vocabulary, has more choices to make and there are more items which can be exchanged in any particular position in an utterance. However, why was there no increase in the other types of errors?

For the most part, the surprising increase in the number of substitutions was the result of a confusion between three particular items, "wa", "o", and "no". These occur after substantives and identify the topic, the object, and possession or attribution respectively. They are function words rather than content or lexical words. Not only is there the possibility of phonological confusion for these items, there is also the possibility of tactic confusion as they serve as markers of specific syntactic functions and can all be preceded by nouns. The student became less able to make the necessary distinctions between these items as his knowledge of the language developed. Why might this be so?

We have referred in the introduction to studies of familiarization that indicate that familiarization results in intra-list interference in recall. Also, it is known that responses which can occur in the same context commonly interfere with each other during learning. This interference would increase at first to an asymptote, and decrease as differentiation occurs. The effect would be less where more differential cues are available. For the specific items mentioned above, the aid of difference in referential meaning is absent. However, in group IIIR which had the prior learning of sentence meanings, and also a text, which may have helped in the retention of meanings, the substitution errors were minimal.

Because of the possibilities of phonological and tactic interference and lack of adequate differential cues, it seems that the grammar drills on the items caused the students to become less able to handle the structures as knowledge of other aspects of the language developed. One of the basic grammar drills in our lesson materials was the substitution drill, popular in current drill materials. This drill type rigidly controls the environment of an insertion slot in a pattern drill. It may be that a systematic introduction of a larger number of vocabulary items into the grammatical structures forming the environment for the substitution slot would have facilitated the student's ability to keep distinct the three items so frequently substituted for each other.

While we cannot now determine whether the increase in number of substitutions is the result of conditions peculiar to Japanese structure or to the particular drills used, it does hint that languages and lesson materials should be tested for the types of error which increase with the student's experience.

4.4.4. Pronunciation tests. An important technical difficulty both in research and in evaluation of student performance in ordinary teaching situations is the development of methods for judging pronunciation. Both the teacher and the student have auditory biases which must be compensated for in devising test items. Further, anyone who has had experience in continuous judgement of "accents" discovers that his frame of reference shifts within a very short time so that he either becomes more tolerant or less tolerant of phonetic free variation than he would be with monolinguals. The great importance of this problem in both teaching--where adequate reinforcement of pronunciation practice is at issue--and in research implies that more efforts should be made at finding generally applicable techniques.

The great time and expense required to obtain reliable evaluation of specific pronunciation skills has, for this study as well as others, reduced exploration of specific types of pronunciation difficulties.

4.4.5. Discrimination tests. Somewhat fewer problems appear in testing recognition, or ability to discriminate sounds. We attempted to use ability to discriminate minimally different pairs of items as one measure of student progress in learning Japanese sound sequences. Certain unpredictable scores on the trial group tests suggested that simple discrimination of identities or differences is not really simple at all. Given any pair of minimally different items it is possible that one of the pair may frequently or even always be more difficult to recognize than the other. In a pair where the difference is acoustically difficult, one item may already have been identified by the student as equivalent to a certain sound in his native language. When the correct answer is this item there is a possibility of getting relatively higher correct scores than when the correct match contains the sound which varies more

markedly from the native sound. Thus, there seems to be a tendency to choose as correct that member of a difficult pair which has the greatest similarity to the student's native language. Moreover, if the test question takes the form

súji

a. súji

b. sūuji

where the student is to match "súji" with either "a" or "b", it is possible that position "a" is easier to recognize than "b" since the memory of the initial stimulus is interrupted by item "a" and may be confused with "a" by the time "b" is given. Also, mediation by the student's own pronunciation, and assimilation to English, increases with the delay.

In the discrimination test devised, each pair occurred twice and items to be matched were varied in all the possible ways. A student was required to identify correctly both occurrences of one pair in order to receive a positive score. This technique is standard for tests in which there is likely to be a response bias; thus if a student consistently identifies both A and B as versions of A, he does not significantly differ in his response to them any more than if he randomly assigns A and B to classes A and B.

While the technique of scoring in terms of paired items successfully solves a testing problem, it leaves unexplored the bases for the response preferences which appear. Further study of these bases and improvements on discrimination test designs would be a step toward obtaining a truly reliable evaluation of at least one pronunciation skill, phonological discrimination.

4.4.6. The teaching of meaning. The results for this project apply only to limited ways of teaching meaning. Two methods were used: translation, and context, though the latter was very abbreviated. Would the results be the same if meanings were taught through non-verbal means such as films, pictures, and situational usage? Visual materials would, in the text-less situation, reduce the boredom which seemed to occur, according to student comments. If used instead of translations they would also reduce the tendency on the part of the learner to superimpose the phonological patterns of his own language into the second language. On the other hand, attention to pictures during the time the student was listening to the second language would interfere with some of the advantages to discrimination and memory which we have suggested accrue to those using a text, especially in a minimal monitoring condition. Finally, we may assume that any findings involving the teaching of meanings must be limited in the age group to which they are generalized, until

further research at other ages occurs. It is obvious that the greater verbal skill of adults makes the techniques appropriate for them less appropriate for children.

4.4.7. Study of monitoring. After the fact, this research revealed marked effects of a shift in the intensity of monitoring and recording of student performance. The difference was not due to any change in the policy of giving no correction; it seems to reflect a more general change in the atmosphere of interest and attention. It is obvious that the increased use of laboratory techniques calls for research on the effects of varying systems of monitoring.

4.5. Implications for the teacher. The teacher is reminded that the results of the experiment conducted are relevant only to the average college student age group, not to elementary school students, and only tentatively to high school students or adults beyond college age; the relation between the languages used and the writing system used is a special one needing further study with other languages and other symbol systems; the teaching method was basically audio-lingual, with no classroom instruction--all training taking place in the language laboratory. However, from our experience with the experiment can be drawn a few comments which may be of general use to a teacher.

4.5.1. Order of presentation. Should the teacher conclude from this experiment that it makes no difference when pronunciation drill is given? It was found that the order of presentation of material with and without translations had no effect on learning, either of meanings, or of pronunciation.

In some teaching materials, there is little opportunity for the student to attend to phonological contrasts. Such materials are designed to teach basic vocabulary and syntax alone, and pronunciation practice is set aside for special times in the semester or in the day. We may very well suppose that delay in pronunciation practice, under such conditions, might produce drastic results. But our experiment did not test this possibility.

The teaching materials employed in this experiment were contrastive throughout. Whether meanings were given or not, the student was forced to attend to minimal sound differences. Under such conditions, when there is emphasis throughout on sound contrasts, it seems to make no difference when time is set aside for special attention to sound sequences apart from meanings.

During the course of the experiment, including the pre-tests, monitors observed that all of the students made a variety of errors in pronunciation, and many were gradually corrected. This spontaneous improvement was noteworthy, since the monitors were not allowed to make corrections. It occurred in all groups.

The absence of consistent differences between groups varying in the order of presentation of drills suggests that when the amount of practice of a given type is held constant, change in other variables has slight impact. We cannot conclude that the gross neglect of any area of the linguistic system for a long period of time can be easily corrected. But this is a special situation. If students have average language learning aptitude, if the design of the lesson material, whether for classroom use or laboratory use, has taken into consideration the students' ability to teach and correct themselves, and if the lesson material adequately drills all the areas of the linguistic system to be learned, the amount of practice rather than order should play the major role in facilitating the students' learning.

4.5.2. Social reinforcement. The results of our investigation indicate that students are responsive to social reinforcement, especially in a language training situation which removes one of the three basic data: the sound sequences, the meanings, the written symbolization.

The social reinforcement in this study consisted of monitoring done by the regular laboratory attendant and by one of the project's investigators who observed student performance and reaction, and the recording during training sessions of student performance on particular drills.¹⁰

Although we can make no definite statements concerning the efficacy of laboratory monitoring or discuss the possible effects of various monitoring systems, our results imply that an active interest during laboratory training periods in how and what students are doing does play a role in maintaining the students' interest and attention.

4.5.3. Visual stimulation. The removal of visual stimulation may hamper learning when a student's motivation is not considerably bolstered. Many of our students, the frequency being highest among those without text, expressed regret that there had been no teacher, saying that if a teacher had been present they could have seen his facial expression, his gestures, and also how he made the sounds they were learning. These comments indicate that the teacher would have provided a visual source of information the tape recordings and text do not. The remarks also imply that the teacher would have been something relevant to look at: he would have provided a visual focus of attention.

¹⁰ These recordings were made for the purpose of collecting data on student performance and reaction. At no time was a student allowed to play back his recording.

A text also is a visual source of information and provides a visual focus of attention. Anecdotal support of this point is available.

One student, who had gone through the experiment without the text, expressed a great desire, after the course was over, to have a copy of a lesson or two. When he was given a copy and he had looked at it, his first comment indicated that he had interpreted Japanese words containing long consonants as two-word compounds. His interpretation was based not on what he had learned about Japanese but what he knew about English in which such a double consonant usually appears only at morpheme boundaries, and particularly in compounds.

A frequent complaint of the students without text was that the perforations in the study booths distracted their attention from the lesson. One student complained that the dots would begin to make patterns and the patterns would shift, causing a distracting sense of movement. In another case, the monitor observed that a student usually kept his eyes closed.¹¹

It would seem then that for the student accustomed to learning from books, one of the problems in language study without a text is simply that of not knowing what to do with his eyes which he is accustomed to using as a source for primary information. One may infer that in language courses which emphasize aural-oral laboratory drill, consideration should be given to the possible effects of the lack of visual stimulation, not only visual stimulation which provides information, but also that which provides a focus of attention.

4.5.4. Notation systems. While the results of this experiment suggest that under some conditions the use of a text improves learning, for college students, teachers should generalize these conclusions with caution. The orthography used employed familiar symbols for the most part. Presumably unfamiliar symbols would themselves constitute a special learning hurdle which might interfere with learning of other aspects of the language if introduced early. That is, it is likely that facilitation from the use of texts only occurs if the text looks familiar and can be read almost immediately without special training. Secondly, the benefit from the use of texts may not be as great if there are many differences in the phonemic systems of the first and second language. We have discussed some of these complications in 1.1.

¹¹ Possibly, the student, who made excellent progress without a text, used this method to effectively eliminate a source of interference.

Finally, a special difficulty is introduced by languages such as English and French which employ familiar symbols but have irregular spelling. There is no reason, on the basis of our findings, to believe that early introduction of texts in irregular orthographies would facilitate learning.

4.6. Summary. College student acquisition of a second language under oral-aural conditions was studied in this experiment. The students were given the first 30 hours of a course in Japanese, presented entirely on tape with no correction by a monitor. Lessons were constructed on a contrastive basis, with the emphasis on the learning of phonological and grammatical contrasts in Japanese rather than on acquisition of basic vocabulary.

The purpose of the experiment was the comparison of three orders of arrangement of material, and the assessment of the effects of having a text available. The changes on order of arrangement were made while taking great care to insure that exactly the same lessons were given to all groups for the same periods of time. Two groups received training in sound sequences before they were exposed to translations of the sequences; in a third group training in meanings preceded drill in sound sequences. Two of the groups were contrasted in the length of the period before meanings were introduced. None of the variations appeared to have a direct effect on learning or recall of pronunciation, syntax, or meanings. We may infer that differences found in research on methods are often due to changes in the amount of time allocated to different types of practice, rather than to the order in which skills are taught. When the amount of practice is rigidly controlled, the variations in order for the small time spans employed in this experiment had no impact.

There were indications that students may benefit from training with a text before them, especially if they are trained in a laboratory with reduced motivation and reduced social stimulation. In the second section of the experiment, when monitoring was reduced, a text produced more benefit than in the first semester. Articulatory fluency as well as the learning of meanings and syntax appeared to benefit from the availability of a text. The text employed in the experiment had a normalized phonemic notation with familiar symbols, so it did not require learning many new reading habits. The advantage accruing from use of a text might be lost if the system of notation is complex or fails to signal consistently important aspects of the utterance pattern.

APPENDIX

APPENDIX A

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APPENDIX B

LESSON - TEST PLAN

FALL 1961 GROUPS

Groups: IIR (No Printed Text) and IR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	1-1	1	3-3	3	5-5	5	1	3	5	T	8-	8	11-11	14-	14	14	8	11	14	T	17-	17	20-	20	23-	24	19	22	28	29	30
Lesson	2-2	3A-	3A-	3A	6-	6	2	3A	6	E	9-	9	12-	12	15-	15	9	12	15	E	18-	18	21-	21	24-	17	20	23	E	E	
	2A-	2A	4-	4	7-	7	2A	4	7	T	10-	10	13-	13	16-	16	10	13	16	S	19-	19	22-	22	23	18	21	24	S	T	

Groups: IIR (No Printed Text) and IIR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	1-	3-	5-	1	3	5	1	3	5	T	8-	11-	14-	8	11	14	8	11	14	T	17-	20-	23-	18	21	24	19	22	T	T	
Lesson	2-3A-	6-	2	3A	6	2	3A	6	9-	9-	12-	15-	9	12	15	9	12	15	F	18-	21-	24-	19	22	17	20	23	18	21	24	T
	2A-	4-	7-	2A	4	7	2A	4	7	T	10-	13-	16-	10	13	16	10	13	16	T	19-	22-	17	20	23	18	21	24	T	T	

Groups: IIIR (No Printed Text) and IIIR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	1	3	5	1	3	5	1-3	5-5	1-3	5-5	8-8	11	14	8	11	14	8-	11-14	14-T	17	20	23	18	21	24	19-	22-T	25	28	29	30
Lesson	2	3A	6	2	3A	6	2-3A	6-S	9	9	12	15	9	12	15	12	9-	12-	15-S	18	21	24	19	22	17-	20-	23-E	26-S	29	30	
	2A	4	7	2A	4	7	2A-4	7-T	10	13	16	10	13	16	10-	13-	16-T	19	22	17	20	23	18-	21-	24-T	27	30	31	32	33	

Lessons followed by a "minus" are those in which no English translations are given. Lessons not so marked have English glosses given with the Japanese.

APPENDIX C

LESSON - TEST PLAN

SPRING 1962 GROUPS

Groups: IIR (No Printed Text) and IR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	1-1	1	3-3	3	5-5	5	1	3	5	T	8-	8	11-11	11	14-14	14	8	11	14	T	17-17	20-20	23-24	19	23	24	19	22	T	T	
Lesson	2-2	3A-	3A-	3A	6-	6	2	3A	6	E	9-	9	12-	12	15-	15	9	12	15	E	18-	18	21-	21	24-	17	20	23	E	E	S
	2A-	2A	4-	4	7-	7	2A	4	7	T	10-	10	13-	13	16-	16	10	13	16	T	19-	19	22-	22	23	18	21	24	T	T	T

Groups: IIR (No Printed Text) and IIR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	1-3	5-1	3-1	3-5	5-1	3	5	1	3	5	T	8-	11-14	8	11	14	8	11	14	T	17-17	20-20	23-18	21	24	19	22	19	22	T
Lesson	2-3A	6-2	3A	6	2	3A	6	2	3A	6	E	9-	12-15	9	12	15	9	12	15	E	18-18	21-21	24-19	22	17	20	23	E	23	E
	2A-4	7-2A	4-7	2A	4	7	2A	4	7	T	10-13	16-10	13	16	10	13	16	T	19-19	22-17	20	23	18	21	24	T	24	T	24	T

Groups: IIR (No Printed Text) and IIR (Text)

Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	1	3	5	1-3	5-1	3-5	1	3	5	T	8	11	14	8-	11-14	8	11	14	T	17-17	20-20	23-18	21	24	19	22	19	22	19	22
Lesson	2	3A	6	2-3A	6-2	3A	6	2	3A	6	E	9	12	15	9-	12-15	9	12	15	E	18-18	21-21	24-17	20	23	E	23	E	23	E
	2A	4	7	2A-4	7-2A	4-7	2A	4	7	T	10	13	16	10-13	16-10	13	16	T	19-19	22-17	20	23	18	21	24	T	24	T	24	T

Lessons followed by a "minus" are those in which no English translations are given. Lessons not so marked have English glosses given with the Japanese.

APPENDIX D

Included herein are glossed (G) and unglossed (G) versions of sample drills. The drill types used to introduce, drill, and review pronunciation problems and grammatical patterns are as follows: repetition (including series repetition, and dialogue repetition), contrast, discrimination, anticipation (including dialogue anticipation, dialogue anticipation (reply only), dialogue anticipation (1st utterance only), and partial anticipation), dialogue reply, frame (additive and subtractive), combinative, transformation, and question-answer.

1. Pronunciation Drills.

1.1. Repetition Drill (G): You will hear an item spoken in English and then in Japanese. Immediately after the Japanese there will be a pause in which you are to repeat the Japanese. Do not repeat the English.

flour	kó	_____
incense	kóo	_____
a voice	kóe	_____
a carp	kói	_____
beg	kóu	_____
an armature	kóa	_____

1.2. Repetition Drill (G): You are going to hear Japanese utterances. After each utterance there will be a pause in which you are to repeat the Japanese.

kó	_____
kóo	_____
kóe	_____
kói	_____
kóu	_____
kóa	_____

1.3. Series Repetition Drill (G): You will hear two or more items pronounced one after another. In the pause provided you are to pronounce the entire series.

kí	é	ná	kó	sú	_____
kíi	ée	káa	kóo	súu	_____
sú	súu	sú			_____
kó	kóo	kó			_____
ná	káa	ná			_____
é	ée	é			_____
kí	kíi	kí			_____
ée	é	ée			_____
kíi	kí	kíi			_____
kóo	kó	kóo			_____
káa	ná	káa			_____
súu	sú	súu			_____
kíi	ée	káa	kóo	súu	_____
kí	é	ná	kó	áú	_____

There is no drill of exactly equivalent design for the lesson with glosses.

1.4. Contrast Drill (G): First you will hear an item spoken in English and then in Japanese. Next there will be a pause in which you are to repeat the Japanese. Then you will hear a new English utterance with its Japanese equivalent. You are to repeat the Japanese. Finally you will hear the pair of Japanese utterances. You are to repeat the pair.

a tree	kí	_____	
air	ki	_____	
	kí	ki	_____
a picture	é	_____	
a handle	e	_____	
	é	e	_____
vinegar	sú	_____	
a bird's nest	su	_____	
	sú	su	_____
a pipe	tói	_____	
a question	toí	_____	
	tói	toí	_____
a voice	kóe	_____	
fertilizer	koé	_____	
	kóe	koé	_____
a nose	hána	_____	
a flower	haná	_____	
	hána	haná	_____
an oyster	káki	_____	
a persimmon	kakí	_____	
	káki	kakí	_____
a railroad station	éki	_____	
a fortune	ekí	_____	
	éki	ekí	_____
Mt. Fuji	fúji	_____	
wisteria	fují	_____	
	Fúji	fují	_____

1.5. Contrast Drill (G): You will hear two utterances, each with a pause for you to pronounce the item. Then you will hear the pair together. You are to pronounce the pair.

kí	_____	
ki	_____	
kí	<u>ki</u>	_____
é	_____	
e	_____	
é	<u>e</u>	_____
sú	_____	
su	_____	
sú	<u>su</u>	_____
tói	_____	
toí	_____	
tói	<u>toí</u>	_____
kóe	_____	
koé	_____	
kóe	<u>koé</u>	_____
hána	_____	
haná	_____	
hána	<u>haná</u>	_____
káki	_____	
kakí	_____	
káki	<u>kakí</u>	_____
éki	_____	
ekí	_____	
éki	<u>ekí</u>	_____
fúji	_____	
fují	_____	
fúji	<u>fují</u>	_____

1.6 Discrimination Drill (G): You will hear an item spoken in English. Then you will hear two items in Japanese. You are to pronounce the Japanese item that is the equivalent of the English. Then you will hear the correct Japanese item. Repeat the Japanese.

a seat	séki	sékki	_____	(At	_____
the national treasury	kóko	kókkó	_____	this	_____
a riot	íki	íkki	_____	point	_____
chinaware	séto	sétto	_____	you	_____
individually	kóko	kókkó	_____	will	_____
summertime	káki	kákki	_____	hear	_____
a movie set	séto	sétto	_____	the	_____
a path	íto	ítto	_____	answer.	_____
startled	háto	hátto	_____		_____
the year's end	séki	sékki	_____	Repeat	_____
thread	íto	ítto	_____	it.)	_____
a breath	íki	íkki	_____		_____
a good opportunity	káki	kákki	_____		_____

1.7. Discrimination Drill (G): You will hear two Japanese words and then a third Japanese word. There will be a pause in which you are to indicate whether the third word that you heard is the same as the first or the second word. You will then hear the choice that you should have made. Here is an example in English:

A. hear B. ear ear_____ B. ear
Your response should have been B, (ear).

A.	B.			
íto	ítto	(here	_____	(At
séto	sétto	you	_____	this
háto	hátto	will	_____	point
kóko	kókko	hear	_____	you
káki	kákki	the	_____	will
séki	sékki	item	_____	hear
íki	íkki	to	_____	the
káki	kákki	be	_____	answer.
séto	sétto	identified.)	_____	
kóko	kókko		_____	Repeat
íki	íkki		_____	it.)
háto	hátto		_____	
íto	ítto		_____	

2. Grammar Drills

2.1. Repetition Drill (G):

Mr. Konno is looking at it.	Koñno sañ wa mite imasyá.
Mr. Konno has gone.	Koñno sañ wa itte imasyá.
Mr. Konno has gone to the bookstore.	Koñno sañ wa hoñya e itte imasyá.
Mr. Konno is looking at the bookstore.	Koñno sañ wa hoñya o mite imasyá.
Mr. Konno is looking at the railroad station.	Koñno sañ wa eki o mite imasyá.
Mr. Konno has gone to the railroad station.	Koñno sañ wa eki e itte imasyá.
Mr. Konno has gone to a movie.	Koñno sañ wa eiya e itte imasyá.
Mr. Konno is looking at the movie.	Koñno sañ wa eiya o mite imasyá.
Mr. Konno is looking at the bank.	Koñno sañ wa giñkoo o mite imasyá.
Mr. Konno has gone to the bank.	Koñno sañ wa giñkoo e itte imasyá.
Mr. Konno has gone to the park.	Koñno sañ wa kooen e itte imasyá.
Mr. Konno is looking at the park.	Koñno sañ wa kooen o mite imasyá.
Mr. Konno is looking outside.	Koñno sañ wa soto o mite imasyá.
Mr. Konno has gone outside.	Koñno sañ wa soto e itte imasyá.
Mr. Konno has gone to the hotel.	Koñno sañ wa hoteðu e itte imasyá.
Mr. Konno is looking at the hotel.	Koñno sañ wa hoteðu o mite imasyá.
Mr. Konno is looking at the school.	Koñno sañ wa gakkoo o mite imasyá.
Mr. Konno has gone to school.	Koñno sañ wa gakkoo e itte imasyá.

(for directions see 1.1)

2.2 Repetition Drill (G):

Koñno sañ wa mite imasŷ.
 Koñno sañ wa itte imasŷ.
 Koñno sañ wa hoñya e itte imasŷ.
 Koñno sañ wa hoñya o mite imasŷ.
 Koñno sañ wa eki o mite imasŷ.
 Koñno sañ wa eki e itte imasŷ.
 Koñno sañ wa eiña e itte imasŷ.
 Koñno sañ wa eiña o mite imasŷ.
 Koñno sañ wa giñkoo o mite imasŷ.
 Koñno sañ wa giñkoo e itte imasŷ.
 Koñno sañ wa kooeñ e itte imasŷ.
 Koñno sañ wa kooeñ o mite imasŷ.
 Koñno sañ wa soto e mite imasŷ.
 Koñno sañ wa soto e itte imasŷ.
 Koñno sañ wa hoteđu e itte imasŷ.
 Koñno sañ wa hoteđu o mite imasŷ.
 Koñno sañ wa gakkoo o mite imasŷ.
 Koñno sañ wa gakkoo e itte imasŷ.

(for directions see 1.2)

2.3 Series Repetition Drill (G):

ite	imasŷ	_____
mite	mimasŷ	_____
itte	ikimasŷ	_____
kŷte	ikimasŷ	_____
šŷte	itašimasŷ	_____
kŷtte	kiđimasŷ	_____
kŷte	ikimasŷ	_____
imasŷ	mimasŷ	ikimasŷ
mimasŷ	ikimasŷ	itašimasŷ
ikimasŷ	itašimasŷ	kiđimasŷ
kiđimasŷ	itašimasŷ	ikimasŷ
itašimasŷ	ikimasŷ	mimasŷ

(for directions see 1.3)

There is no drill of exactly equivalent design for lessons with glosses.

2.4. Dialogue Repetition Drill (G): You will hear a pair of utterances spoken in English and then in Japanese. Immediately after the Japanese there will be a pause in which you are to repeat the Japanese.

Is Mr. Shiga opening a bottle?
Yes, he is.

Šiña sañ wa biñ o akete imasŷ ka?
Hai, akete imasŷ.

Does Mr. Konno know Mr. Shiga?
No, he doesn't.

Koñno sañ wa Šiña sañ o šŷtte imasŷ ka?
Iie, šŷtte imaseñ.

Where has the stationmaster gone?
He's gone to Tokyo.

Ekizōo wa doko e itte imasya ka?
Tookyoo e itte imasya.

When will the stationmaster return?
He'll return tomorrow.

Ekizōo wa itsu kaedimasya ka?
Ashita kaedimasya.

Is Mr. Shiga at home?
No, he isn't.

Shiga san wa uchi ni imasya ka?
Iie, imaseñ.

2.5. Dialogue Repetition Drill (G): In the following pairs of Japanese sentences, the second of each pair is a correct reply to the first. The instructor will pause after each pair while you repeat them.

Shiga san wa bin o akete imasya ka?
Hai, akete imasya.

Kōno san wa Shiga san o shitte imasya ka?
Iie, shitte imaseñ.

Ekizōo wa doko e itte imasya ka?
Tookyoo e itte imasya.

Ekizōo wa itsu kaedimasya ka?
Ashita kaedimasya.

Shiga san wa uchi ni imasya ka?
Iie, imaseñ.

2.6 Contrast Drill (G): Note that the contrasted items are related.

look (gerund)	mite	_____	
look	mimasya	_____	
	mite mimasya	_____	_____
stay (gerund)	ite	_____	
stay	imasya	_____	
	ite imasya	_____	_____
go (gerund)	itte	_____	
go	ikimasya	_____	
	itte ikimasya	_____	_____
come (gerund)	kizte	_____	
go	ikimasya	_____	
	kizte ikimasya	_____	_____
cut (gerund)	kiztte	_____	
cut	kidimasya	_____	
	kiztte kidimasya	_____	_____
do (gerund)	shite	_____	
do	itašimasya	_____	
	shite itašimasya	_____	_____

There is no drill of exactly equivalent design for lessons without glosses.

(For directions see 1.5)

2.7 Anticipation Drill (G): You will hear an English utterance. There will be a pause in which you are to give this utterance in Japanese. Then you will hear the correct Japanese. Repeat the Japanese.

Yes, he's looking at it.	_____	(At	_____
No, he isn't looking at it.	_____	this	_____
Yes, it is.	_____	point	_____
No, it isn't.	_____	you	_____
No, he hasn't come.	_____	will	_____
No, he isn't opening it.	_____	hear	_____
Yes, he's doing it.	_____	the	_____
No, he hasn't gone.	_____	answer.	_____
Yes, he's cutting it.	_____		_____
Yes, he's come.	_____	Repeat	_____
Yes, he's opening it.	_____	it.)	_____
No, he isn't cutting it.	_____		_____
Yes, he knows him.	_____		_____
No, he doesn't know him.	_____		_____
Yes, he's come.	_____		_____
No, he isn't doing it.	_____		_____

2.8 Anticipation Drill (G): You will hear an item. There will be a pause in which you are to supply the sentence in which the item occurred. You will then hear the sentence. Repeat it.

Šina sañ	_____	(At	_____
iči peeji no e	_____	this	_____
setto no e	_____	point	_____
akemasŷ	_____	you	_____
soo	_____	will	_____
nañ no e	_____	hear	_____
		the	_____
akete kudasai	_____	answer.	_____
e desŷ ka?	_____		_____
e o mite kudasai	_____		_____
hoñ	_____	Repeat	_____
nañ	_____	it.)	_____
peeji	_____		_____
setto	_____		_____
mite kudasai	_____		_____
soo desŷ	_____		_____
iči	_____		_____
mimasŷ	_____		_____
akemasŷ	_____		_____

2.9. Dialogue Anticipation Drill (G): Following a pair of English utterances there will be a pause in which you are to give both the utterances in Japanese. Do not repeat the English. Then you will hear the correct Japanese. Repeat the Japanese.

Is it a picture
Yes, it is.

Is it a picture?
No, it isn't.

Is it a picture of a movie set?
Yes, it is.

Is it a picture of a movie set?
No, it isn't.

Is this a picture of a movie set?
Yes, it is.

Is this a picture of a movie set?
No, it isn't.

Is this a picture?
Yes, it is.

Is this a picture?
No, it isn't.

(At
this
point
you
will
hear
the
answer.

Repeat
it.)

There is no drill of exactly equivalent design for lessons without glosses

2.10. Dialogue Anticipation Drill (Reply Only) (G): You will hear a pair of English utterances followed by the Japanese for the first sentence of the pair. You are to supply the Japanese reply. You will then hear the reply you should have made. Repeat it in the following pause.

Is Mr. Shiga at home?
No, he isn't.
Shiga san wa uchi ni imasu ka?

Where's Mr. Shiga gone?
He's gone to the bank.
Shiga san wa doko e itte imasu ka?

Where is Mr. Konno?
Mr. Konno's at the park.
Konno san wa doko ni imasu ka?

Is the stationmaster in Hakone?
Yes, he is.
Ekichoo wa Hakone ni imasu ka?

Where's the stationmaster gone?
He's gone to Hakone.
Ekichoo wa doko e itte imasu ka?

(At
this
point
you
will
hear
the
answer.

Repeat
it.)

There is no drill of exactly equivalent design for the lessons without glosses.

2.11. Dialogue Anticipation Drill (First Utterance Only) (G): You will hear an answer to a question. The question will be either a 'nañ' question or a 'kođe wa nan' question. Supply the question which produced the given answer. You will then hear the question and the answer. Repeat them.

E desy.	_____	(At	_____
Kođe wa e desy.	_____	this	_____
Kođe wa setto no e desy.	_____	point	_____
Setto no e desy.	_____	you	_____
Hana desy.	_____	will	_____
Kođe wa hana desy.	_____	hear	_____
Kođe wa hanna no e desy.	_____	answer.	_____
Hana no e desy.	_____	Repeat	_____
		it.)	

There is no drill of exactly equivalent design for the lessons with glosses.

2.12. Partial Anticipation Drill (G): You will hear an item in Japanese which you have practiced as part of a longer utterance. Then you will hear the English equivalent of the utterance. There will be a pause during which you are to give the entire utterance in Japanese. You will then hear the correct Japanese. Repeat the Japanese.

Šiŋa san		
Mr. Shiga, please open your book.	_____	(At
		this
iči peeji no e		point
Please look at the picture on page one.	_____	you
		will
setto no e		hear
It's a picture of a movie set.	_____	the
		answer.
nañ no e		
What is it a picture of?	_____	Repeat
		it.)
soo		
That's right.	_____	
akemasu		
All right, I'll open it.	_____	
akete kudasai		
Mr. Shiga, please open your book.	_____	
setto		
It's a picture of a movie set.	_____	
e o mite kudasai		
Please look at the picture on page one.	_____	
soo desu		
That's right.	_____	

There is no drill of exactly equivalent design for the lessons without glosses.

2.13. Dialogue Reply Drill (G): You will hear an utterance in Japanese. Repeat it and give the appropriate 'iie' reply. You will then hear the correct response. Repeat the response.

Dai ni ka no jumbi o šŷte imasy ka?	_____	(At	_____
Itte imasy ka?	_____	this	_____
Kŷte imasy ka?	_____	point	_____
Šiŷa saŷ o šŷtte imasy ka?	_____	you	_____
Koŷe wa Šiŷa saŷ no e desy ka?	_____	will	_____
Koŷe wa e desy ka?	_____	hear	_____
		the	
		answer.	
		Repeat it.)	

There is no drill of exactly equivalent design for the lessons with glosses.

2.14. Additive Frame Drill (G): You will hear an utterance. Use this utterance correctly with "mite imasy".

ookina e	_____	(At	_____
čiisana hoŷya	_____	this	_____
taiheŷ čiisana ki	_____	point	_____
taiheŷ ookina biŷ	_____	you	_____
kono ookina haná	_____	will	_____
kono čiisana kaŷ	_____	hear	_____
kono taiheŷ ookina kŷši	_____	the	_____
kono taiheŷ čiisana ɖaŷ no haŷa	_____	answer.	_____
kono taiheŷ čiisana suŷi no ki no ie	_____		_____
kono taiheŷ ookina giŷkoo	_____	Repeat	_____
kono ookina kooeŷ	_____	it.)	_____

There is no drill of exactly equivalent design for the lessons with glosses.

2.15. Subtractive Frame Drill (G): You will hear an utterance containing "juu". Give the utterance without the "juu".

dai juu yoŷ ka	_____	(At	_____
dai juu ni ka	_____	this	_____
dai juu go ka	_____	point	_____
dai juu saŷ ka	_____	you will	_____
dai juu ikka	_____	hear the	_____
		answer.	
		Repeat it.)	

There is no drill of exactly equivalent design for the lessons with glosses.

2.16. Combinative Drill (G): You will hear a partial sentence. You are to make the sentence complete by combining it with 'hai' or 'iie', whichever one is the correct choice. You will then hear the correct combination. Repeat it.

mite imasya	_____	(At	_____
mite imasen	_____	this	_____
soo desya	_____	point	_____
soo ja adimasen	_____	you	_____
kite imasen	_____	will	_____
akete imasen	_____	hear	_____
site imasya	_____	the	_____
itte imasen	_____	answer.	_____
kutte imasya	_____	Repeat	_____
itte imasya	_____	it.)	_____
akete imasya	_____		_____
kutte imasen	_____		_____
site imasya	_____		_____
site imasen	_____		_____
kite imasya	_____		_____
site imasen	_____		_____

There is no drill of exactly equivalent design for the lessons with glosses.

2.17. Transformation Drill (G): You will hear a Japanese statement. Then you will hear the English equivalent of the question form of that statement. There will be a pause while you produce the question in Japanese. You will then hear the instructor give the Japanese. Repeat it. Here is an example:

E desya.	E desya ka?	E desya ka?	E desya ka?
Is it a picture?	(Student)	(Instructor)	(Student)
Dan no hana desya.		(At	
Is it an orchid?	_____	this	_____
		point	
Paan desya.		you	
Is it bread?	_____	will	_____
		hear	
Dan desya.		the	
Is it a platform?	_____	answer.	_____
		Repeat	
Hoan desya.		it.)	_____
Is it a book?	_____		
Keeki desya.			
Is it a cake?	_____		_____
Eki desya.			
Is it a railroad station?	_____		_____
Kumai desya.			
Is it cloth?	_____		_____

Šiito desu.
Is it a sheet? _____

Ito desu.
Is it thread? _____

Koo desu.
Is it incense? _____

Hana desu.
Is it a flower? _____

2.18. Transformation Drill (G): You will hear a statement.
Turn it into a question by adding 'ka'.

Kode wa e desu.
Šiŋa saŋ wa kono e o mite imasu. _____

Kode wa hon desu.
Šiŋa saŋ wa kono hon o mite imasu. _____

Kode wa kyūshi desu.
Šiŋa saŋ wa kono kyūshi o mite imasu. _____

Kode wa keeki desu.
Šiŋa saŋ wa kono keeki o mite imasu. _____

Kode wa dan no hana desu.
Šiŋa saŋ wa kono dan no hana o mite imasu. _____

(At
this
point
you
will
hear
the
answer. _____

Repeat
it.) _____

2.19. Question-Answer Drill (G): You will hear a question
and answer, first in English and then in Japanese. Repeat the Japanese.

What lesson is this?
This is the 2nd lesson.

Kode wa dai nan ka desu ka?
Kode wa dai ni ka desu.

What lesson is this?
This is the 20th lesson.

Kode wa dai nan ka desu ka?
Kode wa dai jikka desu.

What lesson is this?
This is the 1st lesson.

Kode wa dai nan ka desu ka?
Kode wa dai ikka desu.

What lesson is this?
This is the 10th lesson.

Kode wa dai nan ka desu ka?
Kode wa dai jikka desu.

What lesson is this?
This is the 3rd lesson.

Kode wa dai nan ka desu ka?
Kode wa dai san ka desu.

2.20 Question-Answer Drill (G): You will hear a question and its answer. Just listen. You will hear the question again. Repeat it. Then you will hear the answer. Repeat it.

Šina sañ wa itsu Tookyoo e ikimasy ka?
Ašita ikimasy.

Šina sañ wa itsu gakkoo e kimasy ka?
Ašita kimasy.

Šina sañ wa itsu Hakone e kaedimasy ka?
Ašita kaedimasy.

Šina sañ wa itsu kono kañ o akemasy ka?
Ašita akemasy.

Šina sañ wa itsu dai juu hāčŷ ka no juñbi o šimasy ka?
Ašita šimasy.

Appendix E

SCRIPT, FINAL TEST (TEST 3)

I. You will hear one Japanese word. It will be followed by two more words. Check on the answer sheet which of the two words is the same as the first. Here is an example in English:

1. Pete

- a. pit
- b. Pete

You should have checked the "b" space on the answer sheet. Now go on with the questions.

2. tsuní

- a. suní
- b. tsuní

3. kŷči

- a. kŷči
- b. kŷši

4. šŷtttsui

- a. šŷtsui
- b. šŷtttsui

5. kinoo

- a. kirjoo
- b. kinoo

6. kŷku

- a. kŷkú
- b. kŷku

7. haqé

- a. haqé
- b. hadé

8. sóoto

- a. sótto
- b. sóoto

9. xŷkú

- a. šŷkú
- b. xŷkú

10. su

- a. su
- b. sú

11. séččŷ

- a. séčŷ
- b. séččŷ

12. šókkŷ

- a. šókŷ
- b. šókkŷ

13. koí

- a. koí
- b. kóí

14. ximó

- a. šimó
- b. ximó

15. késa

- a. késsa
- b. késa

16. kaŷí

- a. kaŷí
- b. kaní

17. kášši

- a. kášši
- b. káši

18. kŷči

- a. kŷči
- b. kŷši

19. é

- a. e
- b. é

20. sékkŷ
a. sékŷ
b. sékkŷ

21. hai
a. hai
b. hái

22. káŝŝi
a. káŝŝi
b. káŝi

23. hadé
a. hadé
b. hadé

24. é
a. é
b. e

25. ŝimó
a. ŝimó
b. ximó

26. kŷkú
a. kŷkú
b. kŷku

27. kŷci
a. kŷči
b. kŷči

28. tsuní
a. suní
b. tsuní

29. sótto
a. sótto
b. sóoto

30. koí
a. koí
b. kóí

31. késa
a. késsa
b. késa

32. sékŷ
a. sékkŷ
b. sékŷ

33. sú
a. sú
b. su

34. kinoo
a. kinoo
b. kinoo

35. ŝókkŷ
a. ŝókkŷ
b. ŝókkŷ

36. séččŷ
a. séččŷ
b. séččŷ

37. xŷkú
a. ŝŷkú
b. xŷkú

38. den
a. den
b. den

39. kaní
a. kaní
b. kaní

40. kái
a. kai
b. kái

41. ŝŷtsui
a. ŝŷtsui
b. ŝŷtsui

II. You will hear a Japanese utterance. Then you will hear two replies. Indicate the correct reply by checking "a" or "b" on your answer sheet. The utterance will be repeated. The replies will be heard only once. Here is an example in English:

1. Please close the window. Please close the window.
 - a. All right, I'll do it.
 - b. All right, I won't.

You should have checked the "a" space on the answer sheet. Now go on with the test.

2. Kōde wa hana no e desu ka?
 - a. Iie, soo ja adimaseñ.
 - b. Kōde wa hana desu.
3. Dai yon ka no junbi o shite kudasai.
 - a. Hai, shite imasu.
 - b. Hai, itashimasu.
4. Kōde wa dai nan ka desu ka?
 - a. Kōde wa dai dokka desu.
 - b. Kōde wa honya no e desu.
5. Ekizōo wa doko e itte imasu ka?
 - a. Eiga e itte imasu.
 - b. Hai, itte imasu.
6. Pan o kutte ite kudasai.
 - a. Hai, kutte imasu.
 - b. Hai, kidimasu.
7. Nan no e desu ka?
 - a. Iie, soo ja adimaseñ.
 - b. Hato no e desu.
8. Kōno san wa doko ni imasu ka?
 - a. Hōtō ni imasu.
 - b. Iie, imaseñ.
9. Hon o akete imasu ka?
 - a. Iie, akete imaseñ.
 - b. Hai, akemasu.
10. Dai hach ka no junbi o shite kudasai.
 - a. Iie, shite imaseñ.
 - b. Hai, itashimasu.

11. Kođe wa watakŷsi no taiheñ ċiisana peñ desŷ ka?
 - a. Iie, soo ja ađimaseñ.
 - b. Kono taiheñ ċiisana peñ desŷ.
12. Šiŋa sañ wa itsu gakkoo e kaedimasy ka?
 - a. Iie, kaette imaseñ.
 - b. Ašŷta kaedimasy.
13. Kŷte kudasai.
 - a. Hai, ikimasy.
 - b. Hai, kŷte imasy.
14. Yamada sañ, kono hoñ o mite itte kudasai.
 - a. Hai, mite ikimasy.
 - b. Hai, itte mimasŷ.
15. Kođe wa nañ no e desŷ ka?
 - a. Kođe wa kañ no e desŷ.
 - b. Kođe wa e desŷ.
16. Koñno sañ no ookina biñ o mite kudasai.
 - a. Hai, mimasŷ.
 - b. Hai, mite mimasŷ.
17. Akete ite kudasai.
 - a. Hai, akete ikimasy.
 - b. Hai, akete imasy.
18. Šŷtte imasy ka?
 - a. Iie, šŷte imaseñ.
 - b. Iie, šŷtte imaseñ.
19. Kŷte kudasai.
 - a. Hai, kiđimasy.
 - b. Hai, ikimasy.
20. Akete itte kudasai.
 - a. Hai, akete ikimasy.
 - b. Hai, akete imasy.
21. Šite kudasai.
 - a. Hai, itašimasy.
 - b. Hai, ikimasy.
22. Kŷte kudasai.
 - a. Hai, kiđimasy.
 - b. Hai, ikimasy.

23. Ite kudasai.

- a. Hai, ikimasu.
- b. Hai, imasu.

24. Štete imasu ka?

- a. Hai, štete imasu.
- b. Hai, štete imasu.

25. Ite kudasai.

- a. Hai, ikimasu.
- b. Hai, imasu.

26. Kute kudasai.

- a. Hai, itasimasu.
- b. Hai, ikimasu.

III. a. Notice the use of "kiji" in the following sentence: "Kiji o mite kudasai. Kiji o mite kudasai." You will hear an item. Each item will be said twice. If the item can occur in the same place in the sentence "kiji" does, check "yes" on your answer sheet; if it cannot, check "no." Here is an example in English:

1. Notice the use of "the man" in "The man saw the dog. The man saw the dog." Can "am watching, am watching" occur in the same place as "the man?"

You should have checked the "no" space on the answer sheet. "Am watching saw the dog." is not a sentence in English. Now you will hear the Japanese sentence again. "Kiji o mite kudasai. Kiji o mite kudasai." Can the following items be substituted for "kiji?"

- | | |
|-------------------|------------------------------|
| 2. iči peeji no e | 10. ie |
| 3. hato | 11. uči ni |
| 4. itsu | 12. Yamada san wa |
| 5. ki | 13. kono |
| 6. hana | 14. soto |
| 7. gakkoo e | 15. watakushi no e |
| 8. nan no e | 16. kono taihen ookina kishi |
| 9. iie | |

b. Now notice the use of "kiji" in the following sentence: "Kiji desu. Kiji desu." You will hear an item. Each item will be said twice. If the item can occur in the same place in the sentence "kiji" does, check "yes" on the answer sheet; if it cannot, check "no." Here you will hear the sentence again: "Kiji desu. Kiji desu."

- | | |
|---|--|
| 1. na ⁿⁱ no e | 6. hon o |
| 2. u ^{chi} ni | 7. wataku ^{shi} no ka ⁿⁱ |
| 3. ko ^{de} wa na ⁿⁱ | 8. doko |
| 4. itsu | 9. hon ^{ya} e |
| 5. ki no e | 10. ie |

c. Notice the use of "Tookyoo" in the sentence "Has he gone to Tokyo? Tookyoo e itte imasu ka? Tookyoo e itte imasu ka?" You will hear an item. Each item will be said twice. If the item can occur in the same place in the sentence "Tookyoo" does, check "yes" on the answer sheet; if it cannot, check "no." Here you will hear the sentence again: "Tookyoo e itte imasu ka? Tookyoo e itte imasu ka?"

- | | |
|----------------------|--|
| 1. soto | 6. gakkoo ni |
| 2. doko | 7. ko ^{de} wa na ⁿⁱ |
| 3. e ^{ki} | 8. na ⁿⁱ no kono e |
| 4. iie | 9. taihe ⁿ ookina gi ⁿ koo |
| 5. hon ^{ya} | 10. hote ^{du} no e o |

IV. You will hear an English utterance. Then you will hear three Japanese utterances. Indicate the Japanese which matches the English by checking "a", "b", or "c" on the answer sheet. The English will be said twice, the Japanese only once. Here is an example:

1. please
- a. hai
 - b. kudasai
 - c. a^gimaseⁿ

You should have checked the "b" space on the answer sheet. Now go on with the test.

2. a nose
 - a. hána
 - b. haná
 - c. suná
3. outside
 - a. doko
 - b. sooto
 - c. soto
4. cedar
 - a. tsumi
 - b. suní
 - c. kuní
5. chinaware
 - a. ito
 - b. hato
 - c. seto
6. He's going to come
 - a. ikimasu
 - b. kimasu
 - c. kimasu
7. seven
 - a. shichi
 - b. hachi
 - c. shichi
8. a bank
 - a. eiha
 - b. ginkoo
 - c. kocho
9. a maid
 - a. meedo
 - b. koodo
 - c. sudo
10. what
 - a. san
 - b. nan
 - c. tan
11. a house
 - a. uchi
 - b. itsu
 - c. ie
12. the nineteenth lesson
 - a. dai juu kyuu ka
 - b. dai juu ka
 - c. dai kyuu ka
13. Yes, he has come.
 - a. Hai, kite imasu.
 - b. Hai, ikimasu.
 - c. Hai, kite imasen.
14. It's this picture.
 - a. Koko wa e desu.
 - b. Kono e desu.
 - c. Kono wa e desu.
15. Please look at the tray.
 - a. Bin o mite kudasai.
 - b. Ban o mite kudasai.
 - c. Bon o mite kudasai.
16. All right, I'll keep cutting it.
 - a. Hai, kimasu.
 - b. Hai, kite imasu.
 - c. Hai, kite mimasu.
17. the third lesson
 - a. dai san ka
 - b. dai yon ka
 - c. dai nan ka
18. Mr. Yamada knows Mr. Shiga.
 - a. Shiga san wa Yamada san o shirimasu.
 - b. Yamada san wa Shiga san wa shirimasu.
 - c. Yamada san wa Shiga san o shirimasu.
19. I am going to look at this book.
 - a. Wataku shi wa kono no hon o mimasu.
 - b. Wataku shi wa kono hon o mimasu.
 - c. Wataku shi wa kono hon o mite mimasu.
20. Mr. Konno has gone to the hotel.
 - a. Konno san wa hotei e itte imasu.
 - b. Konno san wa hotei ni imasu.
 - c. Konno san wa hotei no e ikimasu.
21. This is a picture of a very large hotel.
 - a. Koko wa taihei ookina hotei no e desu.
 - b. Koko wa hotei no taihei ookina e desu.
 - c. Koko wa ookina hotei no e desu.

V. You will hear a Japanese utterance. Then you will hear three English utterances. Indicate the English which matches the Japanese by checking "a", "b", or "c" on the answer sheet. The Japanese will be said twice, the English only once. Here is an example:

1. kiji

- a. cut
- b. cloth
- c. please

You should have checked the "b" space on the answer sheet. Now go on with the test.

2. kiñ

- a. a bottle
- b. a can
- c. gold

8. kómma

- a. a top
- b. a comma
- c. from now on

3. ká

- a. lesson
- b. shellfish
- c. very

9. ičí

- a. one
- b. slowly
- c. a comb

4. fykušuu

- a. preparation
- b. a review
- c. a number

10. poñ

- a. pop
- b. a tray
- c. bread

5. ađé

- a. that(over there)
- b. this
- c. a branch

11. keši

- a. an orchid
- b. a chrysanthemum
- c. a poppy

6. kien

- a. a garden
- b. a tree
- c. an opportunity

12. dai jikka

- a. the first lesson
- b. the tenth lesson
- c. the fourteenth lesson

7. gakkoo

- a. a building
- b. a bank
- c. a school

13. Hai, šimasu.

- a. Yes, he's going to do it.
- b. All right, I'll do it.
- c. Yes, he's doing it.

14. Seki desu ka?
- a. Is it a seat?
 - b. Is it a cake?
 - c. Is it a railroad station?
15. dai juu ikka no junbi
- a. the twenty-first lesson
 - b. the eleventh lesson
 - c. the first lesson
16. Iie, Hakone e kite imasen.
- a. No, he hasn't returned to Hakone.
 - b. No, he hasn't gone to Hakone.
 - c. No, he hasn't come to Hakone.
17. Kono hotedu ni ite kudasai.
- a. Please stay at Mr. Konno's hotel.
 - b. Please go to this hotel.
 - c. Please stay at this hotel.
18. Aoki san wa kono bin o akemasu.
- a. Mr. Aoki is going to open this bottle.
 - b. Mr. Aoki is opening this bottle.
 - c. Mr. Aoki, open this bottle.
19. Kono e wa suji no ki no dan no e desu ka?
- a. Is this picture a picture of a cedar tree?
 - b. Is this picture a picture of a gate of cedar wood?
 - c. Is this picture a picture of a platform of cedar wood?
20. Koda wa taihen ookina ki no chiisana e desu.
- a. This is a small picture of a very large tree.
 - b. It is this small picture of a very large tree.
 - c. This is a very small picture of a large tree.
21. Yamada san wa itsu Aita san no honya e ikimasu ka?
- a. When is Mr. Yamada going to Mr. Aita's bookstore?
 - b. Mr. Yamada, when is Mr. Aita going to the bookstore?
 - c. When is Mr. Yamada going to Mr. Aita's bank?

VI. The answers to this question will be recorded. You will hear an English item two times. In the following pause you are to give the Japanese equivalent of the English. Say the Japanese twice. Here is an example:

1. please, please

kudasai, kudasai

Remember, you must say the Japanese twice.
Now go on with the test.

2. a flower	haná
3. a monarch	kin̄gu
4. a bathtub	yúoke
5. a movie	eiya
6. the national treasury	kókkó
7. a plate	ban̄
8. a chrysanthemum	kíku
9. vinegar	sú
10. a riot	ikki
11. a gate	kádo
12. a bookstore	hónya
13. art	áto
14. a comb	kúsi
15. bread	pán
16. a school	gákkoo
17. a platform	dán
18. thread	íto
19. incense	kóo
20. a tree	kí
21. the stationmaster	ekúchoo
22. the sixth lesson	dai dokka
23. page one	ichi peeji
24. an orchid	dan no hana
25. the twentieth lesson	dai ni jikka
26. Please stay.	Ite kudasai.
27. the eleventh lesson	dai juu ikka
28. He's coming tomorrow.	Ashta kimasu.
29. a small garden	chisana kae
30. a house of cedar wood	suji no ki no ie
31. All right, I'll do it.	Hai, itashimasu.
32. It's a large sheet.	Ookina shiito desu.
33. this book of mine	kono wataku
34. No, he's not looking at the book.	ie, hon o mite imasen.
35. This is a picture of a movie set.	Kode wa setto no e desu.
36. What lesson is this?	Kode wa dai nan ka desu ka?
37. Is Mr. Shiga at home?	Shiga san wa uchi ni imasu ka?
38. Please keep looking at Mr. Konno.	Konno san o mite ite kudasai.
39. Mr. Konno is opening a can.	Konno san wa kan o akete imasu.

- | | | |
|-----|--|--|
| 40. | Mr. Yamada, what is this? | Yamada sañ, kođe wa nañ desʸ ka? |
| 41. | Mr. Shiga is going to cut
this cake. | Šiŋa sañ wa kono keeki o kiđimasʸ. |
| 42. | This is a very small cake. | Kođe wa taiheñ čisana keeki desʸ. |
| 43. | Mr. Yamada knows me. | Yamada sañ wa watakʸši o šʸtte
imasʸ. |
| 44. | When is Mr. Konno going to
the hotel? | Koñno sañ wa itsu hoteđu e ikimasʸ
ka? |
| 45. | When is Mr. Shiga returning
to Tokyo? | Šiŋa sañ wa itsu Tookyo e kađimasʸ
ka? |
| 46. | I am going to do the prepara-
tion for the 1st lesson tomorrow. | Watakʸši wa ašʸta dai ikka no juñbi
o šimasʸ. |

VII. You will hear a Japanese utterance. There will be a long pause in which you are to say the utterance twice. Here is an example in English:

"Who'd you see yesterday?"

"Who'd you see yesterday?
Who'd you see yesterday?"

At this point depress the "play" key of your tape recorder. If your tape reels do not move, stand up so that the assistant can start your tape recorder before beginning this question.

Now go on with the test. Remember, say each utterance twice!

kudasai.
 Mite kudasai.
 E o mite kudasai.
 Čiisana e o mite kudasai.
 Peeji no čiisana e o mite kudasai.
 Iči peeji no čiisana e o mite kudasai.
 Siŋa sañ, iči peeji no čiisana e o mite kudasai.

Šiņa sañ, peeji no čīisana e o mite kudasai.
 Šiņa sañ, ciisana e o mite kudasai.
 Šiņa sañ, e o mite kudasai.
 Šiņa sañ, mite kudasai.

Question VII, Part II. Repeat each of the following utterances twice, just as you have been doing in the preceding part of this question. Repeat each utterance twice.

1. Itte kudasai.
2. E o mite imasya.
3. Itte mite kudasai.
4. Kiji o kytte itte kudasai.
5. Kokko no e o kytte kudasai.
6. Dañ no han no e o mite kudasai.
7. Šiņa sañ no hoñ o akete mite kudasai.
8. Šiņa sañ no e wa dañ no hana no e desya.
9. Koñno sañ, Šiņa sañ no kiji o kytte ite kudasai.
10. Šiņa sañ wa Koñno sañ no taiheñ čiisana hoñ o kytte mite imasya.

VIII.* This test consists of 53 short Japanese sentences. Some of the sentences appear more than once. Although you are familiar with most of the words, a few of the words will be new to you.

You will hear a sentence said twice. There will be a short pause for you to say that same sentence twice. Speak when you hear a ring, like this: (RING). For example,

Yamada sañ desya ka?

Yamada sañ desya ka? (RING)

When you hear the ring, you say,

Yamada sañ desya ka?

Yamada sañ desya ka?

You are now going to practice. Try to make your pronunciation as much like that of the Japanese voice as you can. Let's begin.

Hai, akemasya.

Hai, akemasya. (RING)

PAUSE

Hato no e desya.

Hato no e desya. (RING)

PAUSE

*For items judged phonetically, critical segments are underlined.

We will now go ahead with the test. Remember to say each sentence twice, with as good pronunciation as you can. There will be a pause now. Please give your name.

PAUSE

All right, let's begin the test.

K~~u~~ku des~~y~~.

Iie, mite mimaseñ.

Kode wa doku des~~y~~.

Koñbañ wa.

[Buffer item]

Ade wa xitai des~~y~~.

Mite ite kudasai.

Kono kado des~~y~~ ka?

Iie, sitte imaseñ.

Čiisana biñ des~~y~~.

[Buffer item]

Šooko des~~y~~.

Kiñ no e des~~y~~ ka?

Han~~u~~ no e des~~y~~.

Iie, soo ja ađimaseñ.

[Buffer item]

Kode wa su des~~y~~.

Čotto kite imas~~y~~ ka?

Kode wa sai des~~y~~.

Tei o mite kudasai.

Anata wa?

[Buffer item]

Kó des~~y~~ ka?

Eki e kimas~~y~~.

Šookoo des~~y~~ ka?

Ič~~y~~ peeji no e des~~y~~.

Ekicoo wa soto e itte imasya.

Eina wa doko desya ka?

Hai, itashimasya.

Koeen e kaette imasya.

Ano kuda desya.

Me wa ciisai desya.

Hotedu e itte imasya.

Me o xidakimasya.

Kan o akete kudasai.

Ima dekakemasya.

Kyaku desya.

Iie, mite nimaseen.

Kode wa doku desya.

Konbaan wa.

[.Buffer item]

Ade wa shitai desya.

Mite itte kudasai.

Kono kaado desya ka?

Iie, shite imaseen.

Ciisana biin desya.

[Buffer item]

Shoko desya.

Ki no e desya ka?

Hana no e desya.

Iie, soo ja adimaseen.

[Buffer item]

Kode wa su desya.

Cooto kyte imasya ka?

Kode wa sai desya.

Te o mite kudasai.

Anata wa?

[Buffer item]

Kôu desu ka?

Eki e ikimasu.

Shookoo desu ka?

Now please give your name.

PAUSE

End, Test III, Question VIII.

Figure 1

Comparison of Spring and Fall Test Results
for Group I Reading

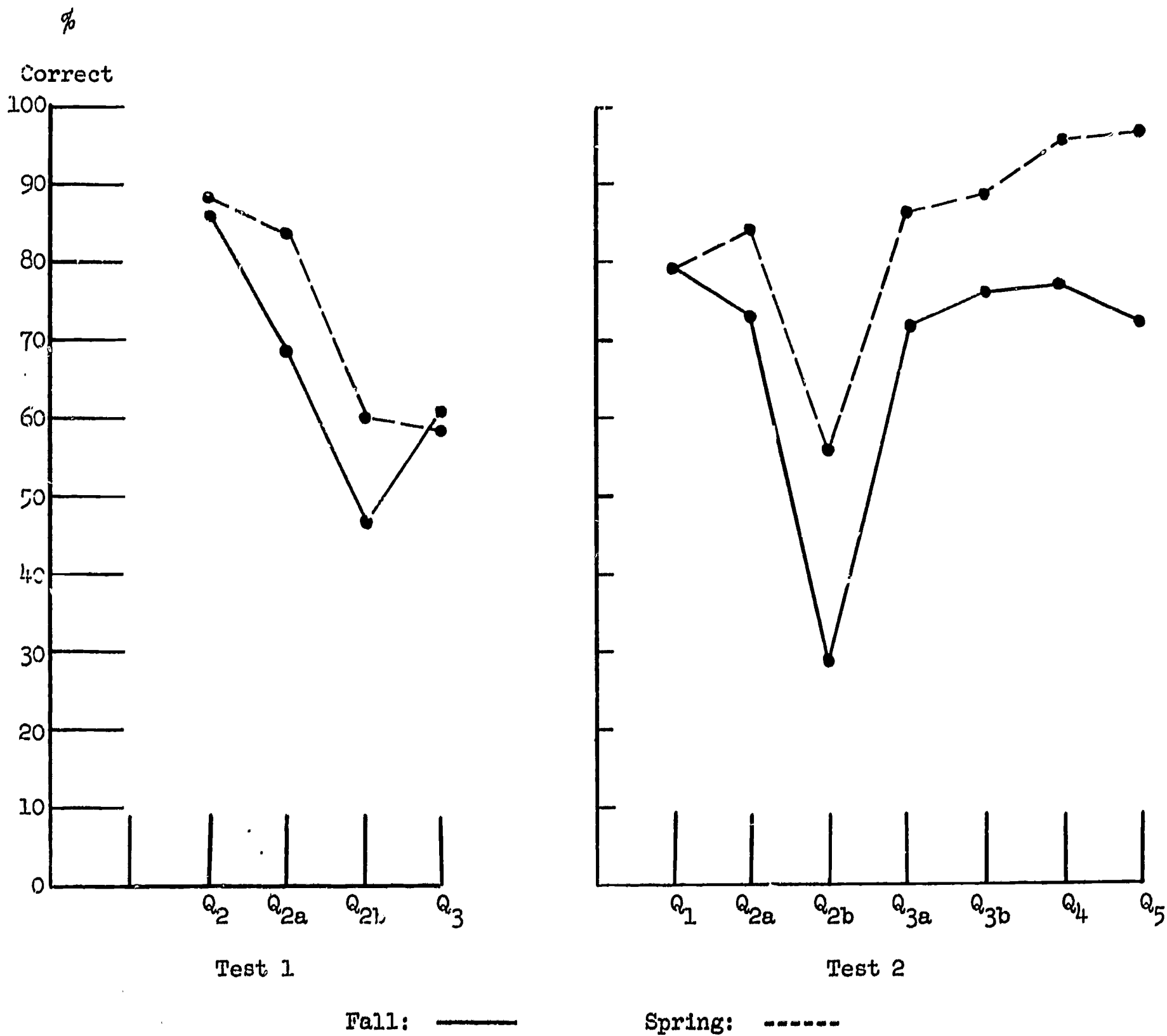


Figure 2

Comparison of Spring and Fall Test Results
for Group I Reading

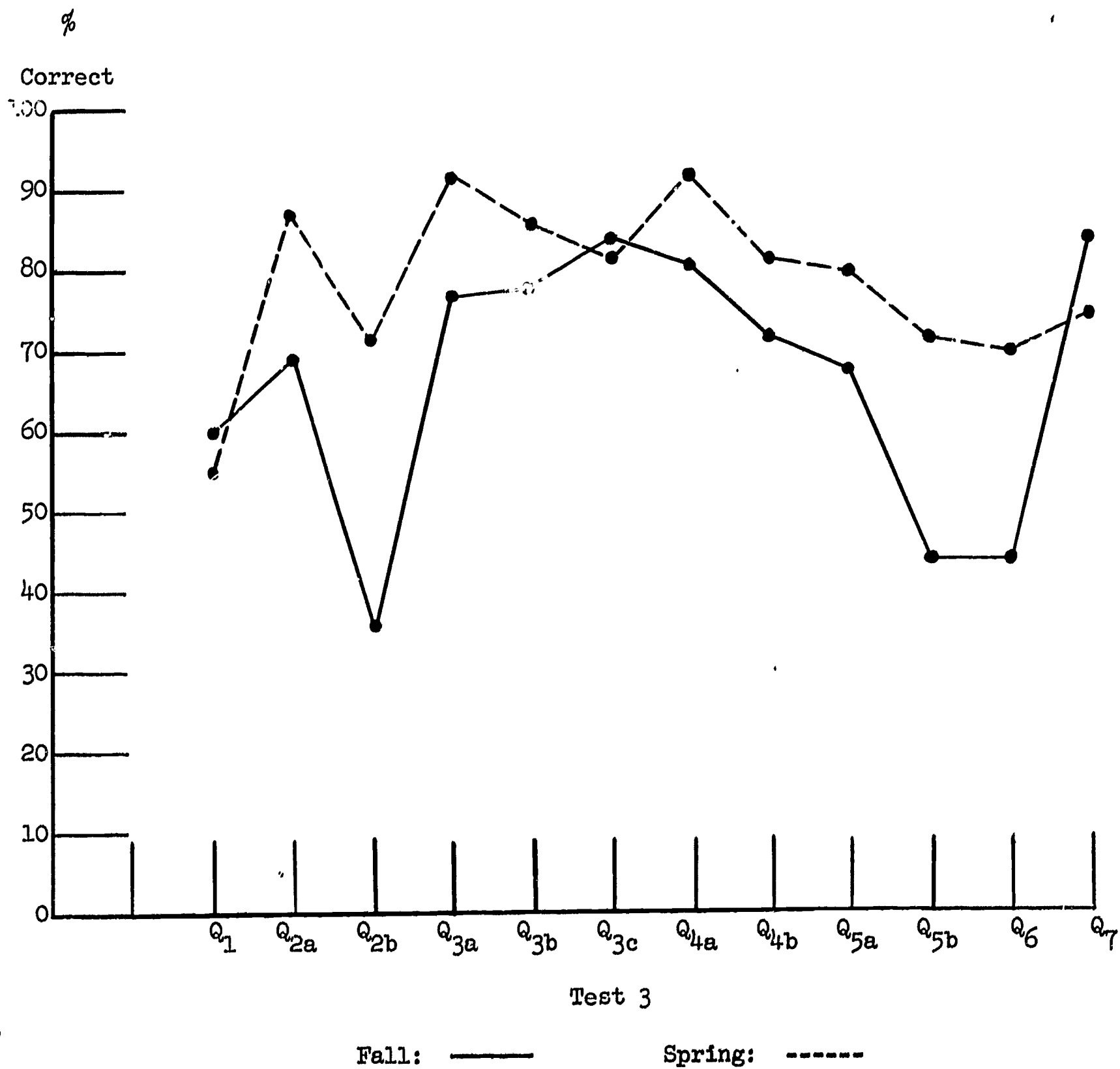


Figure 3

Comparison of Spring and Fall Test Results
for Group II Non-reading

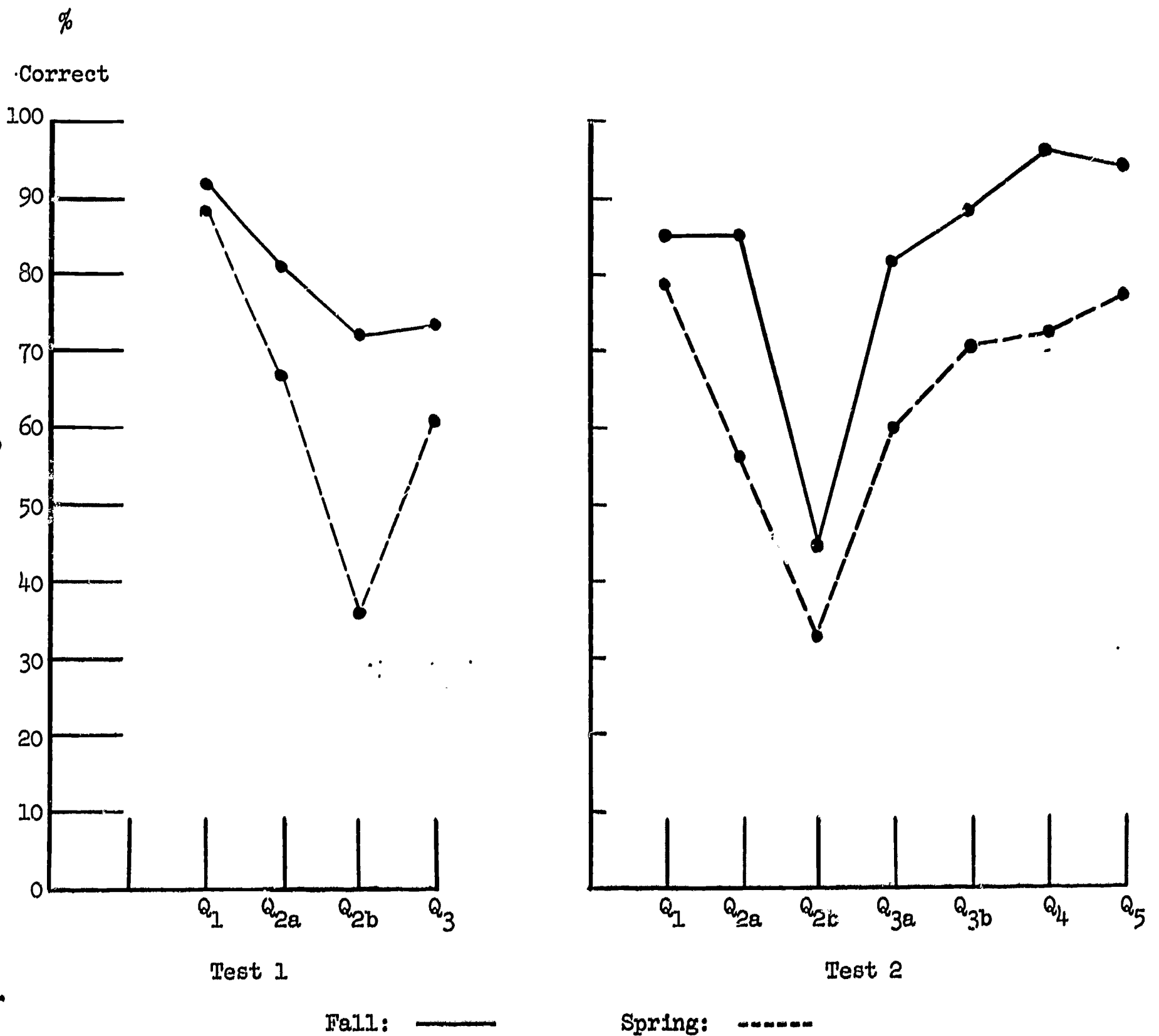


Figure 4

Comparison of Spring and Fall Test Results
for Group II Non-reading

